Development Cost Charge

BEST PRACTICES GUIDE

BRITISH COLUMBIA

Ministry of Community Services

Acknowledgements

The *DCC Best Practices Guide* was initiated by the Development Finance Review Committee, which is made up of representatives from the province, local government and the development community. It was first published in 1997 and a second edition was published in 2000.

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Library and Archives Canada Cataloguing in Publication Data
Main entry under title:
Development cost charge best practices guide

"Third edition"—Preface.
Previously published 2000 by British Columbia Growth Strategies Office and Municipal Financial Services.
ISBN 0-7726-5452-2

1. Impact fees - British Columbia. 2. Municipal services - British Columbia - Finance. 3. Local finance - British Columbia. 4. Real estate development - British Columbia - Costs. I. British Columbia. Ministry of Community Services.

HJ9352.B7:D48 2005 336.176 C2005-960225-2

106-01338/

Preface

This is the third edition of the *DCC Best Practices Guide*. The feedback from local government and the development community has been complimentary and supportive of the material included in the guide. Each edition has provided additional information, which reflects changes to best practices and legislation.

The *DCC Best Practices Guide* has two primary objectives:

- to encourage local governments to standardize the establishment and administration of development cost charge programs; and
- to provide some flexibility to accommodate a municipality's specific circumstances.

The best practices outlined in the guide were developed in partnership between the province, local government and the development community. Local governments who choose to follow the recommended best practices can expect an expedited process for provincial approval of their development cost charge bylaws. Further, they may also receive the support of the development community, which advocates for more transparent and understandable DCC programs.

A companion document called the *Development Cost Charge Guide for Elected Officials* provides additional information.

Development cost charges are one method to fund the infrastructure associated with growth. For more information on other financing tools please consult the *Development Finance Choices Guide*. It outlines considerations in the choice of a particular tool and provides advice on the design and implementation of the various tools.

These guides are available electronically through the search function of the British Columbia Government website at: www.gov.bc.ca

NOV 16 2005

Table of Contents

Introduction v
- Objectives of this Guide v
- Ministry Support v
- Background vi
- Guiding Principles vi
  - Integration vi
  - Benefiter Pays vii
  - Fairness and Equity vii
  - Accountability vii
  - Certainty vii
  - Consultative Input vii
  - Definition of Local Government vii
- Overview of Contents viii
- Amendments viii
- Disclaimer viii

PART 1: GUIDEBOOK

Chapter 1 - Overview of DCCs 1.1
- General Definition 1.1
- History of DCCs in British Columbia 1.2
- Legislative and Regulatory Background 1.2
- Local Government Responsibilities 1.3
- Exemptions from DCCs 1.3
- DCC Programs and Other Local Government Planning 1.5
- Bylaw Approval Process 1.6

Chapter 2 - Bylaw Development 2.1
- Public Process 2.1
- Extent of Application 2.5
  - A Municipal-wide Charge 2.5
  - An Area-specific Charge 2.5
  - Criteria for Decision-making 2.5
  - Options for Road DCCs 2.6
  - Options for Storm Drainage DCCs 2.7
  - Options for Sanitary DCCs 2.8
  - Options for Water DCCs 2.9
  - Options for Parkland DCCs 2.10
- Program Time Frame 2.10
  - A Build Out Program 2.11
  - A Revolving Program 2.11
  - Criteria for Decision-making 2.11
- Categories of Land Use to be Charged 2.12
  - Types of Land Use 2.12
  - Level of Category Breakdown 2.14
- Appropriate Units for Charges 2.18

Table of Contents

Units for Residential Land Uses 2.18
Units for Non-residential Land Uses 2.19
Other Options 2.19
Criteria for Decision-making 2.19
Project Eligibility 2.21
Road Projects 2.22
Storm Drainage Projects 2.23
Sanitary Projects 2.24
Water Projects 2.24
Parkland Acquisition and Improvement Projects 2.25
Recoverable DCC Costs 2.27
Interest for DCCs in Exceptional Cases 2.28
Conditions which apply 2.28
Assist Factor 2.30
Criteria for Decision-making 2.31

Chapter 3 - Bylaw Administration 3.1
Collection of Charges 3.1
Collection at Subdivision Approval 3.1
Collection at Building Permit Issuance 3.2
Monitoring and Accounting 3.3
Use of Reserve Funds 3.5
Grace Periods and Instream Applications 3.5
Grace Periods 3.5
Subdivision Applications 3.6
Building Permit Applications 3.6
Credits and Rebates 3.7
DCC Credits 3.7
DCC Rebates 3.8
Process for Bylaw Amendment 3.9
Minor DCC Amendment 3.9
Major DCC Amendment 3.10

PART 2: TECHNICAL MANUAL

Chapter 4 - Estimating New Development 4.1
Prerequisite Policy Decisions 4.1
Sources of Background Information 4.1
New Development Projections 4.2
Projected Residential Development 4.2
Projected Commercial and Industrial Development 4.9
Population growth method 4.9
Development potential method 4.11
Projected Institutional Development 4.12

Table of Contents

Chapter 5 - Compiling a DCC Program 5.1
- Prerequisite Policy Decisions 5.1
- Source of Background Information 5.1
- Estimation of Capital Costs 5.1
- Presentation of a DCC Program 5.4

Chapter 6 - Determining the Net DCC Recoverable Amount 6.1
- Deducting Grants 6.1
- Allocating Benefit 6.1
  - Roads 6.2
  - Storm Drainage, Sanitary, and Water 6.2
  - Suggestions for Apportionment 6.2
- Applying the Municipal Assist Factor 6.5
- Calculating the Net Recoverable Cost of the DCC Program 6.5
- Deducting Existing DCC Reserves 6.6
- Calculating the Net DCC Recoverable Amount 6.6

Chapter 7 - Calculating DCCs 7.1
- Approaches to DCC Calculation Methodology 7.1
- Road DCCs 7.1
- Storm Drainage DCCs 7.5
- Sanitary DCCs 7.7
- Water DCCs 7.11
- Parkland DCCs 7.13

Chapter 8 - Bylaw Presentation 8.1
- Legislative Basis 8.1
- DCC Bylaw 8.1
- Supporting Documentation 8.1

Appendix A - Ministry of Community Services Submission Requirements A.1

Appendix B - Developement Cost Charge (Instalments) Regulation B.2

Introduction

Development Cost Charges (DCCs) are monies that are collected from land developers by a municipality, to offset some of the infrastructure expenditures incurred, to service the needs of new development. Imposed by bylaw pursuant to the *Local Government Act*, the charges are intended to facilitate development by providing a method to finance capital projects related to roads, drainage, sewers, water and parkland.

Many cities and towns in British Columbia face significant development pressure, which requires the expansion of existing or the installation of new infrastructure systems, to support new development and its demand on utilities and services. However, the costs associated with these infrastructure requirements create significant public sector burdens. Increasingly all governments are facing significant constraints in the use of general purpose taxation and have placed greater emphasis on the "user pay", or "benefiter pay", principle. In response to these pressures, DCCs have been utilized by local governments as a cost recovery mechanism for apportioning infrastructure project costs amongst developers of land.

DCCs allow monies to be pooled from many developers so that funds can be raised to construct the necessary services in an equitable manner. Simply, the municipality can be considered to be the co-ordinator of the capital program and administrator of the funds collected.

Objectives of this Guide

The objective of the *Development Cost Charge Best Practices Guide* is to encourage local governments to adopt standard practices for the formulation and administration of DCC bylaws, while recognizing some flexibility is necessary to accommodate unique local circumstances.

The guide builds on the general provisions of the *Local Government Act* (LGA) and encourages certainty and consistency in the development of DCC programs, especially in the areas of cost charge calculation and bylaw administration.

Ministry Support

Under the *Local Government Act*, DCC bylaws must be sent to the Ministry of Community Services to be approved by the Inspector of Municipalities before they may be legally adopted. Local governments following the guide in preparing a bylaw and the DCC calculations can expect to obtain an expedited approval. To assist in the approval review of a proposed DCC Bylaw, Appendix A contains a Submission Summary Checklist. A copy of this checklist should be completed by the local government and attached to the bylaw approval package being sent to the Inspector of Municipalities.

Background

In 1995, the province embarked on a comprehensive review of the systems used in British Columbia for financing the public costs of development. The Development Finance Review Committee (DFRC) was created and asked to examine a variety of issues, primarily related to the DCC mechanism. The DFRC membership represents the following principal stakeholders:

- Ministry of Community Services;
- Urban Development Institute;
- Canadian Home Builders' Association of B.C.;
- B.C. Real Estate Association;
- Planning Institute of B.C.; and,
- Union of B.C. Municipalities.

The DFRC initiated and participated in the preparation of the first edition of the *DCC Best Practices Guide*, and has reviewed and contributed to subsequent editions.

This edition incorporates legislative changes from 2004 that provide the ability to:

Local Government Act – s.932 (March 2004)

Community Charter – s. 189 (Sept 2004)

Local Government Act – s. 933 (4.1) (a) & (b) (Sept 2004)

- include interest charges in exceptional circumstances[1];
- borrow between DCC funds;
- charge DCCs at building permit stage on development of fewer than four units; and,
- set a threshold higher than $50,000 for the minimum value of work on which DCCs may be imposed.[2]

Guiding Principles

The guide is based on six significant principles, which should be followed in the development of a DCC bylaw.

INTEGRATION

A DCC program is subordinate to the broader goals of a community and therefore, should reflect other initiatives, such as the goals set out in the *Local Government Act* and other provincial legislation, Regional Growth Strategies, and Official Community Plans. The charges are only one element of a municipality's approach in dealing with issues of land efficiency, housing affordability, and community sustainability. Development of DCCs must be consistent with community plans, land use plans, and corporate financial and capital infrastructure strategies.

[1] Proclamation of section 171 of the *Local Government Statutes Amendment Act, 2000*.

[2] Sections 4, 15, 16 and 21 of the *Community, Aboriginal and Women's Services Statutes Amendment Act, 2004* (Bill 36).

BENEFITER PAYS

Infrastructure costs should be paid by those who will use and benefit from the installation of such systems.

FAIRNESS AND EQUITY

Recognizing that costs should be shared in some way amongst benefiting parties, DCCs should employ mechanisms that distribute these costs between existing users and new development in a fair manner. Further, within the portion of costs that are attributable to new development, DCCs should be used to equitably distribute costs between the various land uses and different development projects.

ACCOUNTABILITY

The establishment of DCCs should be a transparent, local government process, and all information on which DCCs are based should be accessible and understandable by stakeholders.

CERTAINTY

DCCs are a co-ordinated effort, where the local government's role is to facilitate the level of development expected, based on regional and community planning; the local government simply acts as the administrator of the DCC program. Therefore, certainty should be built into the DCC process, both in terms of stable charges and orderly construction of infrastructure. Stability of DCC rates will assist the development industry in the planning of their projects.

At the same time, sufficient DCC funds must be collected to ensure that financing is available for construction of infrastructure in a timely manner. Inadequate planning may result in developments being deferred or even cancelled.

CONSULTATIVE INPUT

The development of DCCs must provide adequate opportunities for meaningful and informed input from the public and other interested parties.

Definition of Local Government

In the guide, both municipalities and regional districts are included in the term "local government." The local government references to municipalities and councillors apply equally, or are interchangeable, to regional districts and regional district boards.

Overview of Contents

The guide has two parts.

PART I

Part I describes the concept of DCCs and the broad policy issues which should be considered before the establishment of a DCC bylaw. This material will be of interest to municipal councillors, regional district board members and senior staff who have the responsibility of developing policy and establishing a local government's approach to DCCs. Further information is contained in the *Development Cost Charge Guide for Elected Officials.*

PART II

Part II is a technical manual detailing the procedures and calculations associated with developing a DCC bylaw. The range of practices related to each specific technical aspect is presented, along with a description of the rationale which lead to the use of a particular alternative. Where possible, a "recommended best practice" has been identified. This part of the guide is intended for technical staff who will be responsible for the development of the bylaw and the calculation of DCC rates.

Amendments

The *DCC Best Practices Guide* is the responsibility of the Ministry of Community Services. Enquiries regarding this material should be directed to:

Ministry of Community Services
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Victoria B.C. V8W 9T2
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Disclaimer

This document contains recommendations for a consistent approach to the preparation and use of DCC bylaws by local government in British Columbia. It is not intended to contain legal advice. While every care has been taken in the preparation of this document, none of the numerous contributors, nor the Ministry of Community Services, can accept any liability for any loss or damage which may be suffered by any person or organization as a result of its use. Users are encouraged to seek legal advice regarding the drafting and practical application of DCC bylaws.

CHAPTER ONE
Overview of DCCs

This chapter of the guide presents an overview of DCCs including:

- a general definition;
- the legislative and regulatory background for the charges;
- the responsibilities of local government;
- specific exemptions from DCCs;
- the relationship between the DCC bylaw and other local government documents; and,
- the bylaw approval process.

General Definition

A development cost charge is a means provided by sections 932 through 937 of the *Local Government Act* to assist local governments in paying the capital costs of installing certain local government services, the installation of which is directly or indirectly affected by the development of lands and/or the alteration/extension of buildings (section 933(1) and (2)). DCCs can be specified according to different zones or specified areas as they relate to different classes and amount of development, but charges should be similar for all developments that impose similar capital cost burdens on a local government (section 934(2) and (3)). The *Local Government Act* permits DCCs to be established for providing, constructing, altering, or expanding facilities related only to the following local government services:

- roads, other than off-street parking;
- sewage;
- water;
- drainage; and,
- parkland acquisition and improvement (section 933 (2)).

DCCs are payable by parties obtaining an approval of subdivision or a building permit, as the case may be (section 933(1) and (5)).

Inclusion of soft services as a part of DCCs is not permissible under the *Local Government Act*. However, it is noted that the *Vancouver Charter* enables the City of Vancouver to collect DCCs for acquiring property for and establishing childcare facilities, and to create affordable replacement housing for people displaced by development. In addition the *Resort Municipality of Whistler Act* provides the authority to collect DCCs for employee housing in the municipality.

At the risk of oversimplifying a complex issue, DCCs are generally determined by dividing the net capital infrastructure costs attributable to new development over a certain time period, by the corresponding number of projected development units (or area) that will be developed in that same time period. DCC calculations typically coincide with the Financial Plans. DCCs are commonly imposed on a range of land uses, including both residential and non-residential.

History of DCCs in British Columbia

Prior to 1958, the costs of off-site municipal infrastructure services required for new development were typically paid for by the municipality, with no ability to recover the costs from the developer.

In 1958, the *Municipal Act* was amended to permit an Approving Officer to refuse approval of a subdivision plan, if he/she was of the opinion that the cost to the municipality of providing public utilities or other local government works and services would be excessive.

To mitigate the possible rejection of subdivisions, municipal councils began to enact Excessive Subdivision Cost Bylaws or Impost Fees to try to cover the infrastructure costs from new development. However, the courts ruled these bylaws were invalid because although the Approving Officer had the power to refuse subdivision approval, municipalities did not have the power to charge for any resulting infrastructure costs.

A series of *Municipal Act* amendments attempted to address the court ruling. In 1968, development permit powers were enacted which allowed municipalities to designate development areas and control the development of land in those areas. In 1971, this legislation was replaced with land use contract powers. Impost fees levied under a land use contract were found by the courts to be valid. In 1977, land use contract powers were eliminated, and the current authority to impose development cost charges was introduced.

Legislative and Regulatory Background

DCCs are established within a layered governance structure. At the most direct level, DCCs are subject to the policy and technical bulletins issued by the Ministry whose responsibility it is to review and approve the bylaws submitted by local government. This level lies under the legislative framework described by the sections of the *Local Government Act* (section 932 – 937) related to DCCs. The provincial legislation is enacted under the authority of the provincial government as set out in the Canadian Constitution.

The guide bridges the broad legislative framework with specific local government practice, clarifies Ministry policies and practices, and identifies best practices for establishing DCC programs and related bylaws.

Local Government Responsibilities

In the process of developing DCC bylaws, local governments must consider their responsibilities as outlined in the *Local Government Act*. Local governments have to take into account whether the proposed DCCs will:

- be excessive in relation to the capital cost of prevailing standards of service;
- deter development; or,
- discourage the development of reasonably priced housing or reasonably priced serviced land (section 934(4)(d)).

DCCs must be used to acquire or construct the works for which they were collected and cannot be used for any other purpose (section 935). Therefore, a local government should carefully consider broad policy matters and technical issues prior to establishing DCCs.

Relevant policy and technical issues include:

- level of service desired or required;
- impact on housing affordability;
- equity between existing taxpayers and developers or newcomers attracted by development;
- the municipal assist factor;
- the projected types and amount of new development; and,
- the utility services required to support that projected development.

Exemptions from DCCs

Local governments are provided considerable flexibility in establishing DCCs, but the *Local Government Act* does establish a few exemptions and choices to be made in the development of DCC programs. These are three distinctions outlined in the legislation based on type and materiality of the exemption, as well as ensuring equity in the payment of DCCs. Each is discussed below.

TYPE OF DEVELOPMENT

Section 933(4) describes the following circumstance when development is exempt from DCCs:

- where a building permit authorizes the construction, alteration, or extension of a building, or part of a building which is solely used for public worship, such as a church.

Section 933 (12) of the *Local Government Act* includes a permissive authority allowing local governments to provide assistance to non-profit rental housing developers by waiving or reducing DCCs. However, social housing units must still be considered a part of the total housing count.

Also, the intent of the legislation is that in cases where the DCC is waived or reduced, the amount waived is to be entirely supported by the existing development.

MATERIALITY OF THE EXEMPTION

Section 933(4) describes the following circumstances when development is exempt from DCCs:

- where a building permit is issued for the construction, alteration, or extension of a building that contains less than four dwelling units, and the building is exclusively for residential use; and,
- where the value of the work covered by the building permit does not exceed $50,000.

Local Government Act s. 933 (4) & (4.1) (Sept 2004)

In 2004, these exemptions were amended to provide more flexibility. Local governments now have the authority to amend their DCC bylaws to charge DCCs on developments of fewer than four dwelling units that are exclusively for residential use, and local governments can increase the $50,000 exemption threshold.

The first amendment provides local governments with an incentive to wait until the building permit stage to collect DCCs. At the building permit stage, local governments may impose DCCs on the basis of area (square metres or square footage), rather than number of units, which encourages the development of smaller, more affordable housing. This cannot be done at the subdivision stage. Delaying the collection of DCCs can also reduce carrying costs for developers, savings that can be passed on to the home purchaser. Currently, local governments tend to charge DCCs at subdivision, if a subdivision application is required, as there are no exemptions at this stage, rather than wait until an "under-4" developer applies for a building permit.

The second amendment gives local governments the authority to amend their DCC bylaws to set a threshold higher than $50,000 for the minimum value of work on which DCCs may be imposed.

This acknowledges variances in construction costs around the province by maintaining the current $50,000 threshold for charging DCCs, while providing flexibility for local governments to increase the threshold where appropriate. For example, in the Lower Mainland or Victoria, where charging DCCs on building costs of $50,000 could capture renovations that do not require improvements to infrastructure. The $50,000 threshold, however, may still be adequate for areas outside the Lower Mainland.

EQUITY IN EXEMPTION

Section 933(3) states that DCCs are not payable if it can be proven that the development does not impose a new capital cost burden on the municipality, or if a DCC was previously paid for the same development.

For example, depending on the structure of a Land Use Contract, impost fees for services may exempt certain DCCs from having to be paid. Other provisions in the *Local Government Act*, such as Latecomer Agreements (section 939) might also exempt certain capital costs from being recovered through DCCs.

The point of section 933(3) is to prohibit developments from being charged twice. However, if new capital cost burdens will be placed on the local government as a result of further development, then DCCs can be collected on the additional increment of development.

DCC Programs and Other Local Government Planning

DCC programs should be integrated with other local government planning. This requirement is highlighted in the *Local Government Act* (section 934(4)) which requires local governments to take into consideration future land use patterns and development, the phasing of works and services, and the provision of parkland described in an Official Community Plan. Further, if the Inspector of Municipalities determines that a DCC bylaw is not related to capital costs attributable to projects included in a Financial Plan, approval of the DCC bylaw may be refused (section 937 (2))

The establishment of a DCC program to deal with land development infrastructure is based on the relationship and interaction between the Official Community Plan (OCP) and the Financial Plan.

An OCP contains the broad development objectives and policies of the local government. The OCP is often developed within the larger context of a Regional Growth Strategy. It is used as a basis to develop master servicing plans, in accordance with current design criteria and standards. Proposed projects arising out of the servicing plans are compiled in a local government Financial Plan.

The Financial Plan establishes the capital projects required by a municipality (such as roads, drainage, sanitary sewer, water, and parkland) over a certain time period, including projects needed to accommodate new development. The projects for which DCCs are established form a subset of the Financial Plan.

The OCP and Financial Plan are interrelated, and each plan may require adjustment through separate processes in response to the goals, constraints, and achievements of the other. The OCP outlines a community's long term policies and objectives for managing growth and land use. It provides a framework for making development decisions and should be reviewed on a regular basis.

The interaction between local government planning documents involves numerous assumptions and uncertainties, and should be reviewed on a regular basis. Changes made to OCPs or more detailed neighbourhood plans greatly affect development densities, which have a direct bearing on corresponding infrastructure requirements and can affect the Financial Plan.

The intent of developing DCCs is to ensure they appropriately reflect community plans and the costs of capital projects needed to service new development.

Bylaw Approval Process

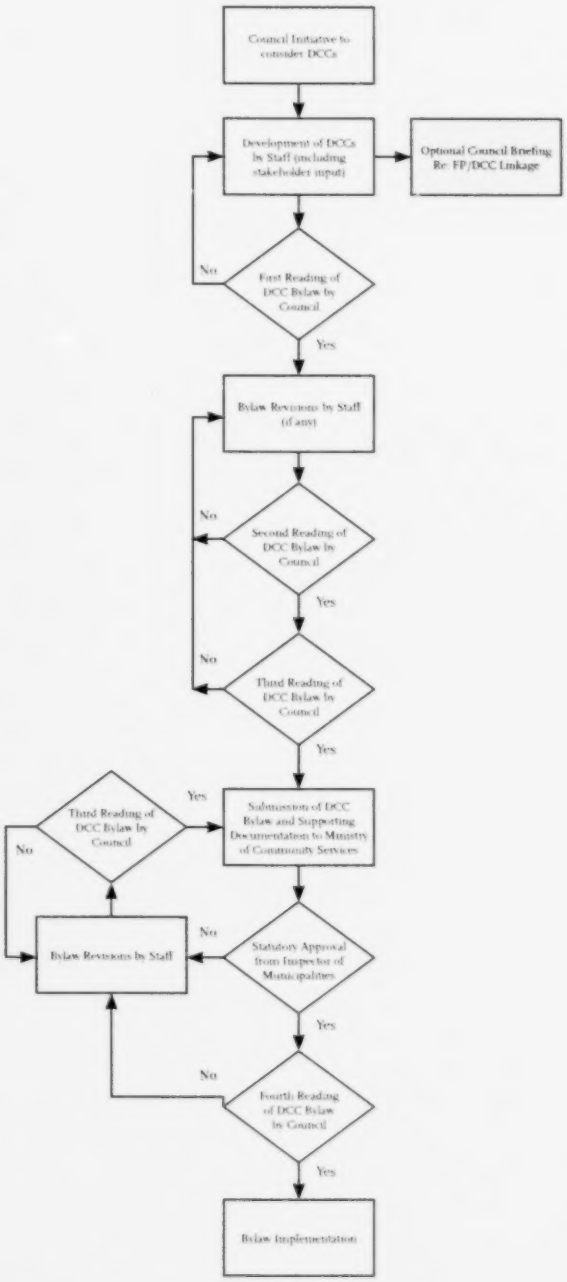
The *Local Government Act* (section 937(1)) requires the Inspector of Municipalities to approve local government DCC bylaws.

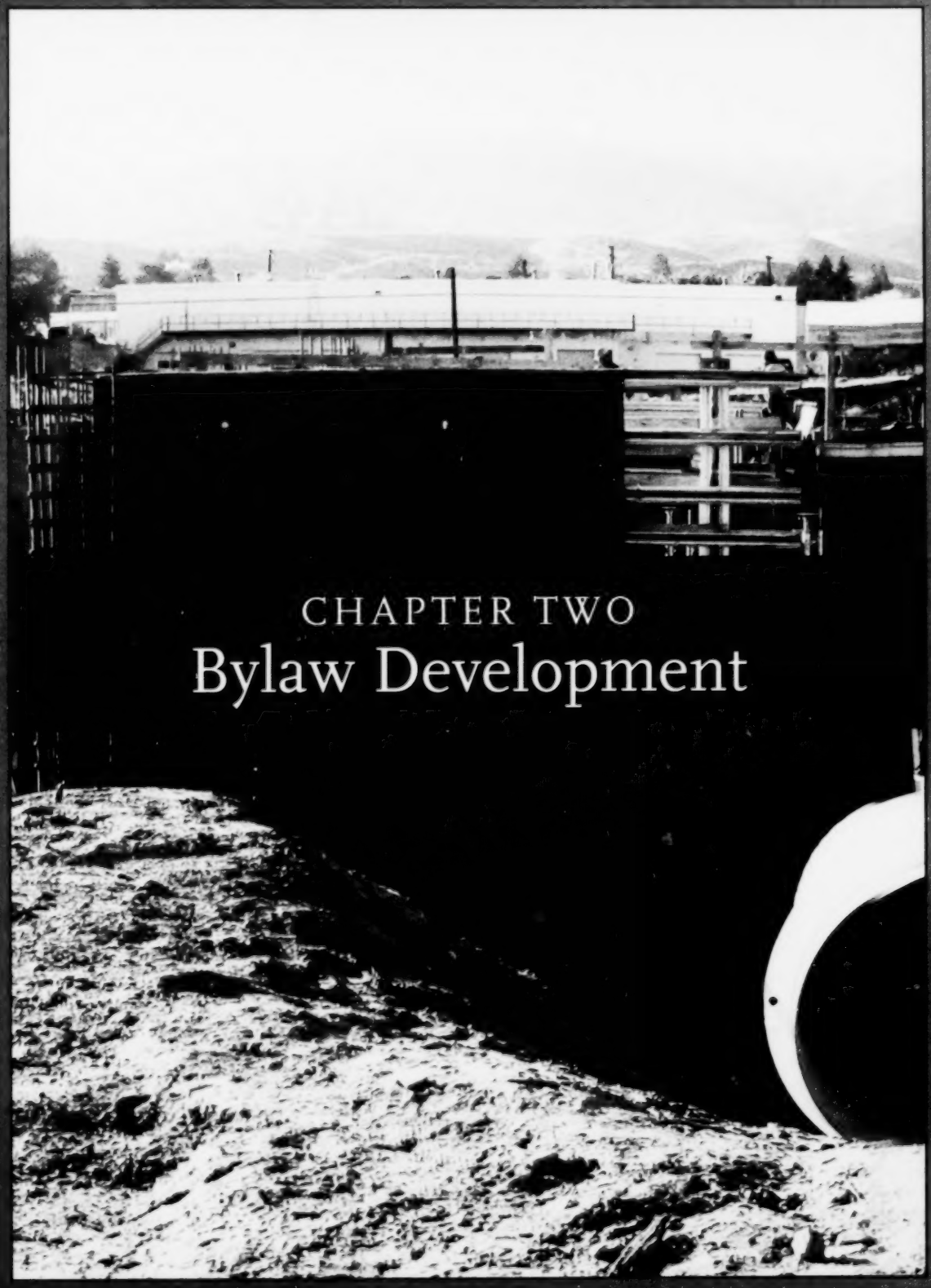
The following steps reflect a typical process for developing a DCC program.

- Council or the regional district board passes a motion to consider a DCC program and the development of a DCC bylaw based on the *DCC Best Practices Guide*.
- Local government staff, or a consultant, develop a bylaw and calculate the DCC rates.
- During the bylaw development phase, input is obtained from the public and interested parties.
- A proposed bylaw is presented to council or the regional district board for first reading.
- Elected officials may request additional public input or revisions prior to second and third reading.
- Following third reading the DCC bylaw and supporting documentation will be forwarded to the Inspector of Municipalities for review and approval.
- If no revisions are required, the bylaw will be returned to the local government for adoption. At this point the DCC bylaw takes effect.

This process is shown schematically in the following diagram.

Bylaw Approval Process





CHAPTER TWO
Bylaw Development

The policy considerations in developing a DCC bylaw include the following:

- an appropriate public process;
- the extent of application of the charges (municipal-wide or area-specific);
- the time frame for the DCC program (build out or revolving);
- the categories of land use to be charged;
- the appropriate units for the charges (a unit or area basis);
- the eligibility of projects;
- the recoverable DCC costs; and,
- the assist factor.

Public Process

Public/stakeholder participation and consultation is one of the guiding principles in establishing DCCs.

The authority to adopt a DCC bylaw rests with elected officials. There are no mandatory public consultation activities in the DCC legislation, such as the public hearing requirements for a rezoning application. However, the Inspector of Municipalities may refuse approval of a DCC bylaw under section 937(3)(b) of the *Local Government Act* if the DCCs are excessive, deter development or discourage construction of reasonably priced housing. Evidence of public/stakeholder consultation may address some of these issues.

The experiences of local governments indicate that a meaningful public process tends to generate DCC bylaws which are effective and accepted by stakeholders who have participated in the decision-making.

RECOMMENDED BEST PRACTICE

The development of a DCC bylaw should include a meaningful public process to obtain input from stakeholders prior to first and third readings.

In the case of a DCC bylaw, stakeholders are defined as all persons, groups or organizations that have a perceived, actual, or potential stake or interest in the results of the decision-making process. Public participation provides an opportunity for stakeholders to be heard and to influence the policies of decision-makers.

The level of input should be limited to DCC considerations, such as the use of municipal-wide or area-specific DCCs, benefit allocation, and a suitable grace period for changes to DCC bylaws. This is because consultations on the other relevant planning documents (e.g. OCPs) have their own consultation requirements.

At a minimum, consultation should include representation from residential and non-residential developers, the public, as well as local government staff from the planning, engineering and finance departments.

Other participants could include representatives from:

- the local chapter of the Urban Development Institute;
- the local chapter of Canadian Home Builders Association;
- the British Columbia Real Estate Association;
- local private sector developers;
- public sector developers such as the School District or Health Board;
- the Chamber of Commerce;
- the Ratepayers Associations; and,
- the general public.

Local governments can choose the most appropriate consultation approaches for their communities which could include:

- asking for comments on the DCC bylaw from selected stakeholders;
- scheduling public meetings with council present as a committee of the whole, or as a policy committee; and/or,
- setting up a liaison committee or an ad hoc task force to review and comment on the DCC bylaw.

Local government liaison committees or task forces have proven useful in facilitating communication between the local government and the development industry regarding proposed bylaws or policies and development approval processes. Typically these committees include representatives from the local government, and commercial and residential developers.

The Urban Development Institute has a history of co-ordinating the participation of its members on liaison committees. The Executive Director at the Institute can be reached at (604) 669-9585.

One Lower Mainland municipality has proposed the concept of a DCC Advisory Forum to provide ongoing public input into the DCC bylaw and future revisions. The forum would include significant stakeholders and, if appropriate, public input would be requested. Comments and advice from the DCC Advisory Forum would be made available to council, or their policy committee in association with any suggested future changes to the DCC bylaw. The Chair would be the person with the responsibility for bylaw development.

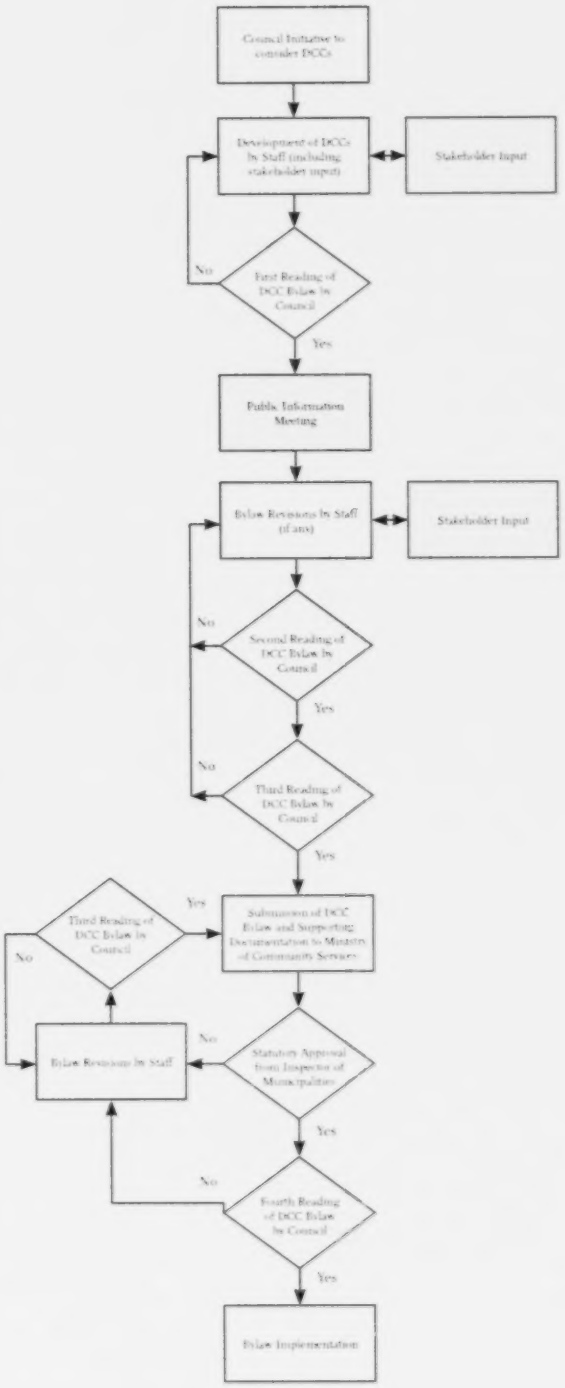
A public participation strategy related to DCCs could involve one or more of the above activities. The actual strategy would depend on a local government's specific circumstances, including the level of complexity involved with a particular set of charges and the level of participation desired by stakeholders.

The recommended best practices regarding a public participation strategy associated with DCCs involves the following minimum activities:

- stakeholder input during the development of the DCC bylaw before first reading;
- a public information meeting after first reading to obtain further input from stakeholders; and,
- additional input before third reading.

This strategy is illustrated in the following schematic.

Stakeholder Participation Strategy.



Extent of Application

The extent to which DCCs will be applied in a municipality or a regional district is an issue which should be considered when developing a DCC bylaw. Deciding whether the proposed DCC will be a "*municipal-wide*" or "*area-specific*" charge will influence the DCC program and the calculation of charges.

A MUNICIPAL-WIDE CHARGE

A municipal-wide DCC means that the same DCC rate is applied for a particular type of land use deemed to generate a similar or same capital cost burden, throughout the municipality regardless of the location of any specific development.

AN AREA-SPECIFIC CHARGE

An area-specific DCC divides the municipality into areas according to geography or any other distinctive quality (e.g. a vacuum sewer system) for the purpose of determining the DCC. As each area has its own set of DCC projects, this results in a distinct charge for a particular type of land use within the defined area. The charges may differ substantially between areas depending on respective servicing requirements and projected development.

CRITERIA FOR DECISION-MAKING

Whichever approach is taken, it should support the principle of fairness and equity. Some general considerations in choosing between the two options include:

- the relationship between those who pay the DCC and benefiting users;
- the complexity and costs of administration associated with numerous charges;
- "Keeping It Short and Simple" to avoid confusion;
- equitable and fair distribution of costs in relation to developing land in different areas of a municipality;
- cash flow considerations;
- funding flexibility associated with fewer but larger accounts; and,
- the desire to support growth in cost effective areas, assuming that the OCP identifies several neighbourhoods having equal development potential without giving any priority.

Given these considerations, a municipality may choose to prioritize or weight the criteria in order to arrive at a decision. The DCC calculation methodology makes every effort to be accurate and detailed; however a certain amount of "averaging" takes place when deriving the charges.

When the circumstances within a certain area (such as projected new development units or the capital cost requirements) deviate significantly from the average condition, consideration should be given to an area-specific charge. However, if new development is projected to occur fairly evenly throughout the municipality, and the capital cost burdens between neighbourhoods are similar, then consideration should be given to a municipal-wide charge. In this case, some fairness and equity is perceived to be "traded off" for simplicity and reduced administrative effort.

Identification of specific projects which are needed to accommodate new development can be a difficult task, when the projected development could take place in a variety of areas. The advantage of a municipal-wide DCC is the flexibility it offers to accommodate changes, when the pattern of development turns out to be significantly different than was projected at the time of establishing the DCC bylaw. However, there are cases where a municipal-wide DCC may not be appropriate, such as:

- areas where "greenfield" developments covered under a Land Use Contract may be excluded from DCCs; and,
- areas where utilities are organized into Local Area Services by bylaw under the *Community Charter* section 210 – 219.

Under a municipal-wide scenario, the monies can accumulate more quickly and provide sufficient funds to complete required capital projects. However, there are cases where a municipal-wide DCC is not appropriate. These include: "greenfield" developments covered under a Land Use Contract and when utilities are organized into Specified Areas by bylaw under Section 646 of the *Local Government Act*.

In both examples, the underlying principle is that developments cannot be "double charged."

OPTIONS FOR ROAD DCCS

Municipal-wide road DCCs

The foundation for a road DCC program is a municipality's Master Transportation Plan (or equivalent), often referenced in the OCP. The objective of a Transportation Plan is to provide an integrated network of arterial, collector, and local roads to enable the effective and efficient movement of people within a municipality.

Traffic from a new development in one area may contribute to the need for widening of an arterial road at the opposite end of the municipality. Thus, in addition to the general criteria, the nature of road usage is a specific consideration with respect to road DCCs. The recommended best practice for the extent of application for road charges is to establish road DCCs on a municipal-wide basis for the following reasons:

- the nature of road usage (i.e., a fair reflection of the relationship between those who pay the DCC and benefiting users);

- bylaw simplicity (therefore reducing the opportunity of errors when determining the amount payable);
- reduced administrative effort;
- facilitation of cash flow; and,
- funding flexibility.

RECOMMENDED BEST PRACTICE

Road DCCs should be established on a municipal-wide basis, unless a significant disparity exists between those who pay the DCC and benefiting users.

Area-specific road DCCs

In certain limited circumstances, an area-specific road DCC may be reasonable. One example is a truck route within a well defined, non-residential area exclusively utilized by industrial land uses. In this case, an argument could be made for an area-specific industrial DCC, as the project would be more equitably funded, assuming there was very limited benefit to broader areas.

Options for Storm Drainage DCCs

The challenge in implementing storm drainage DCCs on a municipal-wide or area-specific basis is to strike a balance between the simplicity of one common set of rates and fair distribution of costs amongst benefiting catchment basins.

Area-specific storm drainage DCCs

The nature of storm drainage is such that capital works are required in direct response to the needs of a particular drainage catchment area or basin. The foundation for the storm drainage DCC program is the municipality's Master Drainage Plan or Stormwater Management Plan for each drainage basin, and the drainage requirements of one basin might be very different from another. If this is the case, consideration should be given to imposing storm drainage DCCs on an area-specific basis. Another situation where an area-specific approach would be appropriate is when a municipality has organized the provision of storm drainage in specified service areas (e.g., drainage districts).

Municipal-wide storm drainage DCCs

If the topography of a municipality contains many drainage basins, a separate set of DCCs for each one may make calculation of charges complicated and future implementation of the bylaw very cumbersome. For example, an estimate of new development would be required for each drainage basin. Separate accounts would be

required for each area DCC to track revenues and expenses. If the capital cost burdens for the drainage basins are similar, the recent trend has been to impose an equal charge over the entire municipality. In addition, drainage projects such as major trunk storm sewers and community stormwater detention facilities serving multiple drainage basins would be better suited to a municipal-wide DCC program.

RECOMMENDED BEST PRACTICE

Storm drainage DCCs should be established on a municipal-wide basis, unless a significant disparity exists between those who pay the DCC and benefiting users.

Rationale for recommended best practice for storm drainage DCCs

Unless there is a significant disparity in terms of either the projected new development units or the capital cost of providing storm drainage infrastructure between drainage basins, the recommended best practice for the extent of application related to storm drainage is to establish these DCCs on a municipal-wide basis for the following reasons:

- facilitation of cash flow;
- funding flexibility;
- bylaw simplicity; and,
- reduced administrative effort.

In other words, the benefits of these criteria outweigh consideration of the nature of storm drainage occurring in distinct basins, unless the principle of fairness and equity is significantly compromised. In particular, local government have found that collection of DCCs according to various drainage areas has resulted in an insufficient accumulation of funds to keep up with the need for drainage infrastructure.

OPTIONS FOR SANITARY DCCS

The arguments related to the options for storm drainage also apply to sanitary DCCs. While the nature of sanitary sewer systems is such that capital works are required in direct response to a particular catchment area, this feature must be balanced with other considerations.

Area-specific sanitary DCCs

An area-specific approach acknowledges the nature of sanitary sewer systems. If the sanitary requirements (from a municipality's Master Sewerage Plan or equivalent) between the various catchments differ greatly, imposing sanitary DCCs with this approach is appropriate.

Sanitary DCCs on an area-specific basis should also be considered, when the municipality has organized the provision of sanitary sewer in specified service areas (e.g., sewer districts)

Municipal-wide sanitary DCCs

Where the sewer subsystems of a municipality are well integrated with sewage lift stations discharging into one regional treatment facility, the sanitary projects may be better suited to a municipal-wide DCC program. In addition, where many catchment areas exist in the municipality with similar sewerage needs, the recent trend has been to impose a municipal-wide charge.

RECOMMENDED BEST PRACTICE

Sanitary DCCs should be established on a municipal-wide basis, unless a significant disparity exists between those who pay the DCC and benefiting users.

Rationale for recommended best practice for sanitary DCCs

The recommended best practice for the extent of application regarding sanitary sewer is to establish these DCCs on a municipal-wide basis. The rationale for this practice is similar to the considerations associated with storm drainage discussed previously.

OPTIONS FOR WATER DCCS

Area-specific water DCCs

Water DCCs on an area-specific basis may be reasonable in limited situations, depending on the circumstances. For example, if the provision of water is separated into various geographic service areas or special development areas (e.g., a specified water area), and these areas effectively behave as isolated systems, then area-specific water DCCs would be appropriate.

Municipal-wide water DCCs

Municipal water systems consist of interconnected grids throughout the municipality. The nature of water distribution networks is very similar to a road system. This feature of water systems is a specific consideration in addition to the general criteria presented at the beginning of this section. The recommended best practice for the extent of application for water DCCs is to establish them on a municipal-wide basis for the following reasons:

- the nature of water distribution networks (i.e., a fair reflection of the relationship between those who pay the DCC and benefiting users);
- bylaw simplicity (therefore reducing the opportunity for errors when determining the amount payable);

- reduced administrative effort;
- facilitation of cash flow; and,
- funding flexibility.

RECOMMENDED BEST PRACTICE

Water DCCs should be established on a municipal-wide basis, unless a significant disparity exists between those who pay and benefiting users.

OPTIONS FOR PARKLAND DCCS

The recommended best practice for the extent of application in the case of parkland charges is to establish parkland DCCs on a municipal-wide basis. The rationale for this practice includes the following considerations:

- new users in one neighbourhood are not prevented from frequenting park and recreational facilities elsewhere;
- bylaw simplicity (therefore reducing the opportunity for errors when determining the amount payable);
- reduced administrative effort;
- facilitation of cash flow; and,
- funding flexibility.

RECOMMENDED BEST PRACTICE

Parkland DCCs should be established on a municipal-wide basis, unless a significant disparity exists between those who pay the DCC and benefiting users.

It is conceivable that a park might serve a specific neighbourhood with little benefit to other neighbourhoods; however local parks may be acquired using means other than DCCs. Therefore, an area-specific approach to parkland DCCs would seldom be appropriate.

Program Time Frame

The appropriate time frame for the DCC program should be considered when developing a DCC bylaw. A certain time period is needed for looking at the estimation of new development and the capital projects required to service that new development. To this end, DCC programs can be established on either a "*build out*" or a "*revolving*" basis.

A BUILD OUT PROGRAM

A build out program, by definition, includes all the DCC projects which will need to be constructed to allow development to occur to the full extent and level defined by the OCP. The OCP usually involves a long time horizon, and the plan may not be fully realized for 20 or 25 years.

A REVOLVING PROGRAM

A revolving program is also consistent with the OCP, but consists of only those projects which are necessary to support development that is expected to occur in some defined time period such as five or ten years. In effect, a number of sequential revolving time windows together make up a build out program.

CRITERIA FOR DECISION-MAKING

Considerations regarding the decision to establish a build out or revolving program include:

- the type of capital projects in the DCC program (e.g., a sewage treatment plant would probably be constructed to build out service population);
- cash flow requirements for DCC project construction, as monies may be collected faster with a shorter term program;
- the availability of long range plans for municipal servicing and land use;
- cost-sharing equity between developers over time;
- DCC rate stability over time, as a revolving program may result in sharp increases/decreases;
- flexibility to use DCC funds for projects where the timing has been advanced;
- time and location sensitivity of development projections; and,
- co-coordinating the time frame of the DCC program with the interval of time between major reviews of the OCP or the time period for a major amendment of the DCC and Zoning Bylaws.

RECOMMENDED BEST PRACTICE

The time frame for a DCC program should be tied into the time frame of a Financial Plan

Beyond these considerations, reference is made to two other DCC issues: DCC recoverable costs and future bylaw administration. With respect to the former, the capital cost component should be consistent with the DCC time period. For example, the full costs associated with and the ultimate standard of construction (e.g., a multi-phased arterial road project) to be achieved within the next 20

years should not be included in a five year revolving DCC program. In this case, only the interim standard envisioned to be constructed in the next five years should be included in the immediate revolving program. Regarding the future administration of the bylaw, the time frame of the DCC program may impact how the various projects are monitored and tracked.

The inability to estimate future project costs adequately often makes creation of a build out program difficult. For road DCCs, long range corridors have to be sufficiently defined in the Master Transportation Plan. The level of information available from background stormwater management plans and studies, from sanitary sewer modelling and master sewerage plans, from water modelling studies, and from the Parks Master Plan and park policies in the OCP will affect whether compiling a build out program is feasible. However, a build out approach offers the most flexibility in relation to development sequencing and project construction timing, since all the projects needed to support build out of the entire OCP are included in the DCC program.

Categories of Land Use to be Charged

Section 934 (3) of the *Local Government Act* provides the authorization for DCCs to be imposed according to:

- different zones or different defined or specified areas;
- different uses; and,
- different classes of development.

In response to this provision, another policy consideration involves establishing the types of development to be charged DCCs. Land uses can include both residential and non-residential development. Although the legislation permits different DCCs for different types of development, it is noted that charges cannot be differentiated by ownership. For example, a private school would be charged the same institutional DCC rate as a public school.

The categories of development to be charged may depend on the choice of a municipal-wide or area-specific DCC application, as charges cannot be imposed for land uses which do not benefit from the DCC program.

TYPES OF LAND USE

Residential uses commonly include single family and multi-family (such as duplex, townhouse, and apartment), while non-residential uses can typically include commercial, industrial, and institutional. "De-coupling" the categories of land use to be charged DCCs (e.g., residential) from an associated building form (e.g., single family residence, townhouse, apartment) has been suggested by some local governments. Instead, residential land use is only distinguished on the basis of unit density. Proponents argue that this approach results

in fairer charges and may promote more efficient land development. A fuller discussion of the density approach is provided in the subsection on "Level of Category Breakdown."

While DCCs could potentially be imposed on all categories of development which benefit from the installation of roads, drainage, sanitary, and water services, the applicability of parkland DCCs to non-residential land uses is not as clear. Some have argued that only residential development creates a need for park and open space, therefore commercial, industrial, and institutional land uses should not be charged parkland DCCs. Others believe that parks and other amenities form part of the attractiveness that cause businesses to locate in a particular municipality, therefore non-residential land uses should contribute to the costs of these facilities.

In addition, employees can enjoy the use of parks during lunch hours and breaks. Sometimes, companies sponsor employee sports teams which utilize civic park facilities. Ultimately, the assessment of the need for and enjoyment of park and open space by the different land uses must be justified.

Imposing DCCs on institutional land use is also difficult. Often, information that would assist in the projection of institutional development does not exist. Most of the data have to be obtained from other agencies which may or may not have planning documents in place. In addition, the actual demand on services greatly varies, depending on the actual use. For example, a government office building may have sewer loadings very similar to commercial land use, while a school or hospital may have much greater loads.

The nature of institutional land use may be different from other types of development. For example, arrangements such as public/private partnerships for the provision of institutional facilities or co-operative relationships emerging between municipal parks departments and school boards were not originally envisioned when the DCC legislation was introduced.

Further, public sector developers feel that the need for institutional development is a consequence of population growth; new infrastructure required to service institutional land uses is in response to other types of development and therefore should be exempt from DCCs.

Conversely, it can be argued that institutional land uses do impact infrastructure systems, and despite the difficulties, it is possible to derive DCCs for institutional land use.

LEVEL OF CATEGORY BREAKDOWN

A DCC bylaw should include sufficient land use categories to reflect the development patterns for which the DCC servicing program is being provided, but should not be so detailed that the process of DCC preparation and administration becomes cumbersome. It is noted that as the number of categories increase, the complexity of the bylaw also increases, in terms of calculating the charges, continued administrative effort, and the opportunity for errors in determining the amount payable. Similar to the "averaging" discussion when referring to a municipal-wide or area-specific DCC program, the challenge in determining the degree to which land use categories should be broken down is to balance the principle of fairness and equity with the benefits of simplicity.

The decision as to how detailed the breakdown of the categories of development should be, for the purpose of setting a DCC, is essentially one that acknowledges "density" subsets within each basic land use category. The relative benefit received between various types of land use is directly related to the density of new development, whether it is expressed as persons per dwelling unit, a per capita demand, equivalent service population, or the size of the unit. For example, different types of residential land use impact the road network differently. To recognize the differences in relative impact, DCCs can be implemented for various residential uses such as rural, single family, low density multi-family, and high density multi-family. In the case of storm drainage, though not considered "density" per se, the amount of impervious area does indeed vary between different types of new development.

It is suggested that specification of land uses should be somewhat generalized, and DCC categories should not be directly referenced to zoning designations in the Zoning Bylaw. The reason for this is that these designations frequently change; DCC rates specified by land use zones would mean that a DCC bylaw amendment would be necessary with every additional zoning designation created. However, the Zoning Bylaw should provide the definition of what uses constitute "residential," "commercial," "industrial," and "institutional."

Residential land use categories

Historically, a strong connection existed between building form and the residential land uses for which DCCs were imposed. Therefore, building forms such as a single family residence, townhouse, and/or apartment were used to reflect the subset within the basic land use category of residential, and these building forms were an adequate proxy to reflect impact on infrastructure services. Recently, certain housing trends have been noticed; the size of single family residences appears to be decreasing in certain locales (sometimes referred to as "small lot development" or "compact housing"), while

some very large multi-family units have shown up on the market. It is now possible to find townhouses and condominiums that match the size of smaller single family dwellings. Assuming that the demand on services from a large multi-family unit might be equal to that for a small single family dwelling, DCCs may not be the most equitably distributed, if imposed according to building type.

In response to the recent housing trends, two approaches are described in this subsection as matters of policy which should be considered when developing a DCC bylaw.

The traditional approach presumes that the strong tie between building form and impact on infrastructure continues to exist. As a result, a typical range of land use categories for the implementation of DCCs includes:

- Single Family Residential;
- Multi-family Residential;
- Townhouse;
- Low Rise Apartment; and,
- High Rise Apartment.

Additional land uses that are less common, but are potential DCC categories include: rural residential, duplex, mobile home pads, and secondary suites. Some guidance in the choice of development categories may be provided by the OCP, which defines generalized land use, and in the Zoning Bylaw, which describes more specific land use zone designations.

The main advantage of the traditional approach is that the data needed to make the unit projections corresponding to the land use categories are often readily available. For example, building statistics and Census information often track development trends on the basis of building form (e.g., ground oriented, single detached). Disadvantages of this approach include not recognizing recent development trends and the view that it may not encourage the building of smaller dwelling units.

Alternatively, an innovative approach reflects the recent housing trends that have seen the building of smaller single family dwellings and larger multi-family units. This approach suggests that the link between DCC categories and building form should be "de-coupled," and the subset within residential land use should be based on a density gradient.

The cutoff between the various density categories would be at the discretion of the municipality, but as an example, some potential ranges (as set out in the School Site Acquisition Charge Regulation) are suggested below:

- "low density" means up to 21 self-contained dwelling units on a gross hectare;
- "medium low density" means 21 to 50 self-contained dwelling units on a gross hectare;
- "medium density" means 51 to 125 self-contained dwelling units on a gross hectare;
- "medium high density" means 126 to 200 self-contained dwelling units on a gross hectare; and,
- "high density" means over 200 self-contained dwelling units on a gross hectare.

The main advantage of the alternative density gradient approach is that it may promote more efficient land development. Neo-traditional planning principles point out that compact forms and higher density contribute to sustainability, as these types of development reduce the amount of roads built, make transit more viable, and have smaller "ecological footprints." The disadvantage of being innovative is that data required to make development projections may not be easily available in the format desired. Therefore, building statistics and Census information may have to be used as a starting point with fine-tuning being done based on what is known about the trend for the number of units per hectare in specific areas in recent times.

As well, the lot size may be factored into DCC calculations. Lot size does contribute to housing affordability, but this saving might be partially offset if DCCs are not allocated equitably.

Certainly it can be shown that smaller lot sizes have less impact on storm drainage. It may be more difficult to produce definitive data that a smaller lot leads to trip reduction or reduced sewer and water usage, but logic would suggest there would sometimes be a reduced impact.

The Ministry's position is that existing legislation does not preclude factoring small lot size into DCC calculations.

The traditional building form approach, when coupled with DCC rates collected on the basis of floor area for multi-family units and DCC rates varying with lot size for single family units, can offer the majority of the advantages of a strict density gradient approach without the associated disadvantages of uncertainty and lack of development projection data.

Instead of a density gradient, the City of Richmond uses a "sliding scale." For further information, contact the Corporate Services Department, City of Richmond at (604) 276-4095. Another innovative alternative is charging DCCs based on floorspace, which is discussed later.

Non-residential land use categories

The degree that non-residential land uses are broken down in a DCC bylaw is rarely as great as for residential. Although the same general considerations apply, the typical types of non-residential land use categories for which DCCs are imposed include:

- Commercial (possibly broken down further into Service Commercial or Office Commercial);
- Industrial (possibly broken down further into Light Industrial and Heavy Industrial); and,
- Institutional.

Due to the wide range of demand on services that exists for various types of institutional development, fairer charges will result, if this land use is further broken down into the types of development that are projected to occur over the DCC time period. Depending on each municipality, the institutional uses may include:

- government offices;
- elementary schools;
- secondary schools;
- private schools;
- universities and colleges;
- hospitals, including private care facilities; and,
- senior or low cost housing (depending on the Zoning Bylaw).

However, due to the problems associated with institutional DCCs as previously discussed, it may be difficult to establish more than one institutional category.

Recommended best practice

The recommended best practice for determining the manner in which DCCs will be set for residential land use is to establish the charge categories according to a density gradient. In this case, the ease in which a DCC bylaw can be developed according to building forms is considered to be "traded off" for the principle of fairness and equity.

Regarding non-residential development, the breakdown of categories within a certain land use for which DCCs are payable should recognize major differences in relative impact, as determined by a municipality.

RECOMMENDED BEST PRACTICE

Residential DCC categories should be established according to a density gradient. The breakdown of categories within non-residential land uses for which DCCs are payable should recognize major differences in relative impact.

Appropriate Units for Charges

Section 934 (3) of the *Local Government Act* further states that a DCC bylaw may be imposed for different sizes or different numbers of lots or units in a development. In other words, the bylaw establishes DCC rates for representative units of development for each identified category of land use. Therefore, the representative unit should be an accepted measure of development. This choice will affect how development projections are made and what information is required in order to make reasonable projections.

UNITS FOR RESIDENTIAL LAND USES

Development unit option

In practice, frequently used units for residential DCCs include "lots" for single family and "dwelling units" for multi-family such as townhouses and apartments. The advantage of this option is that in many local governments, development projections are commonly expressed in these terms.

Floorspace option

DCCs on a floorspace basis for residential development are encouraged by the development industry. Although not as widely implemented as lots or dwelling units, DCCs based on square footage (or square metres) are an option and should be considered. Further, as multi-family DCCs are commonly collected at the time of building permit issuance, an area unit of measure is certainly compatible with this type of land use. "Habitable area" is defined as the area which can be lived in, but does not include patios, balconies, garages, parking stalls or storage areas other than closet space.

Local Government Act – s. 933 (4.1) (a) (Sept 2004)

With the additional authority for local governments to charge DCCs on under four units at building permit stage, charging DCCs based on area is a viable option and should also be considered.

Local governments which have implemented the floorspace option for multi-family units have found no significant difficulties with it and have remarked how easy it is to administer and understand. The square footage option has also proven to be a more accurate measure of "habitable area" and has led to a more useful and less complicated DCC calculation.

In recognition that the construction industry, construction material industry and the general public use imperial measurement, it is recommended that local government DCC bylaws contain an imperial to metric conversion table where bylaws use metric (i.e. floorspace in square metres; density in units per hectare).

UNITS FOR NON-RESIDENTIAL LAND USES

For non-residential land use, an area unit of measure is also often used. For commercial, industrial, and institutional uses, the applicable area can be expressed in square metres (or square footage) of gross building area or hectares (or acres) of gross site area. Typically, floorspace area is chosen for commercial and institutional (because these types of development are often multi-storied), while gross site area is more common for industrial (which is predominantly a single storey development).

OTHER OPTIONS

The number of bedrooms or the number of required parking spaces are much less common ways of levying DCCs. In very special circumstances, these unit measures may be appropriate. However, it is important for equity and ease of implementation that the unit of development be representative, an accepted unit of measure, and easily understood.

CRITERIA FOR DECISION-MAKING

So that the best choice overall to facilitate bylaw administration can be made, affected parties should be consulted regarding the representative unit, including:

- the development industry who will be paying the DCC; and,
- the municipality's "front line" staff that deal with subdivision and building permit applications and who will be determining the amount payable.

It is noted that different units can be applied to different charge categories. For example, single family DCCs could be charged on a lot basis, while multi-family DCCs could be imposed on the basis of floorspace.

Beyond administration issues, the appropriate unit for DCCs may affect housing affordability, a mandated consideration contained in the *Local Government Act* (section 934 (4) (d) (iii)). A 1995 study completed by the Urban Development Institute (UDI) in co-operation with the District of Maple Ridge argues that DCCs based on the size of the dwelling unit would encourage the construction of smaller homes to enhance housing choices and affordability.

If a DCC is levied on the number of lots or dwelling units, the total charge will increase as the number of units increase. This creates an economic incentive for developers to build larger and more expensive units, therefore making housing less affordable. To encourage the development of smaller homes, charging DCCs on a floorspace basis when issuing a building permit for a single-family, duplex and triplex construction should be considered.

The UDI study assumes a link between the size of the unit and the number of occupants. And by implication, a strong connection between unit size and overall service demand is also assumed. The study concludes that the prevailing practice of charges based on lots or dwelling units should be continued, but where feasible, DCCs on an area basis should be considered.

It is unclear whether the size of a dwelling unit is indeed directly proportional to the number of occupants, thereby affecting overall service demand. In particular with larger sized homes, these dwellings may simply be reflecting lifestyle preferences, and the demand on services may not necessarily increase in proportion to the size of the dwelling unit. DCCs must be based on direct or indirect provision of services, not on the ability to pay. While further research is required to determine how housing affordability is impacted by DCCs levied on an area basis, a contributing factor to the municipality's preference for a development unit based DCC is how the *Local Government Act* stipulates the collection of charges.

As most single family lots are created by subdivision (with the exception of areas experiencing redevelopment), single family DCCs are typically payable upon subdivision approval. At this point, the areas of the buildings are often unknown, so the number of lots is an easy way of assessing the total charge payable. Collection of DCCs at the building permit stage facilitates charges levied according to floorspace.

Recommended best practice

In consideration of the above criteria as well as the previous section on "Categories of Land Use to be Charged," the following are the recommended best practices related to the appropriate units for DCCs:

- to facilitate charges imposed on a density gradient, residential DCCs should be established on a development unit basis, although consideration should be given to charging on a floorspace basis if DCCs are charged at the building permit stage;
- for commercial and institutional land uses, DCCs should be established on a floorspace basis; and,
- for industrial land use, DCCs should be established on a gross site area basis.

RECOMMENDED BEST PRACTICE

To facilitate charges based on a density gradient, residential DCCs should be imposed on a development unit basis, unless DCCs are charged at building permit, where floorspace should be considered an option. For commercial and institutional DCCs, floorspace should be used as the representative unit, while for industrial land use DCCs should be established on a gross site area basis.

Project Eligibility

As mentioned in Chapter 1, section 933 (2) of the *Local Government Act* contains the provision that allows local government to use DCCs to assist in the payment of capital costs associated with:

- providing;
- constructing;
- altering; or,
- expanding sewage, water, drainage, and highway facilities.

The same section also allows for DCCs to assist in providing and improving parkland.

In all cases, the projects must directly or indirectly service new development. Infrastructure and park projects can be financed by various means such as:

- DCCs;
- general revenues;
- government grants;
- long-term debt through a borrowing bylaw;
- utility reserves;
- developer funded under a Servicing Agreement;
- Local Area Service Bylaw; or,
- Latecomer Agreements, as specified in section 939 of the *Local Government Act*.

These options are described in more depth in the *Development Finance Choices Guide*. These options are briefly mentioned here only as they relate to DCCs. Relevant points include:

- Local Improvement Projects are generally not included in a DCC program;
- projects constructed under a Latecomers Agreement are not DCC eligible, nor are DCC funded projects eligible for Latecomer Agreements;
- works constructed along the immediate frontage of land being developed to a "Local" standard are normally constructed (and paid for) by the developer of the land (section 938 of the *Local Government Act*); but any oversizing beyond the "Local" standard (i.e., the incremental capacity between local and trunk needs) can be included in a DCC program; and,
- projects which are related to the ongoing maintenance of existing infrastructure (such as a maintenance rehabilitation program, watermain flushing, street repairs, storm sewer cleaning, or replacement due to age) should not be included.

DCC programs generally consist of off-site, trunk or major services and utilities servicing neighbourhood or community-wide needs. As stated previously, DCC programs are based on master servicing plans for respective utilities, and DCC projects make up only part of the Financial Plan.

With the exceptions of parkland improvements and the exclusion of off street parking, the *Local Government Act* does not provide any further guidance as to the type of works that can be included in a DCC program. Therefore, some specific considerations for each particular utility are outlined in the following sections.

ROAD PROJECTS

With respect to road projects, only off-street parking facilities are specifically excluded from a road DCC program. However, in keeping with the intent of the charges, a road DCC program typically consists of transportation network elements such as Arterial and Major Collector Roads. Local and Minor Collector Roads are generally not included, as these roads are often constructed by frontage developments as a requirement of subdivision approval. The road DCC program is an outcome of master transportation planning, and "highway facilities" have been interpreted, in practice, to include projects such as:

- master transportation planning work;
- roads;
- sidewalks and pedestrian facilities;
- traffic signals and controls;
- boulevards and boulevard landscaping;
- noise attenuation structures;
- medians;
- curb and gutter;
- street lighting;
- underground wiring;
- drainage facilities within roadways;
- pedestrian and highway bridges;
- intersection channelization;
- transit provisions such as bus pull-ins; and,
- bicycle/pedestrian infrastructure.

A large road project may be broken down into sub-projects or phases to be carried out at different times or under different accounts. For example:

- design;
- road right-of-way acquisition;
- interim standard road·
- final widening; and,
- top lift pavement course.

In the case where a Major Collector Road provides the primary frontage for, and access to, a land development project, only the "oversizing" component of the road should be included in the DCC program, that is, the difference between the "Local" and "Collector" street standard. The developer is required to bear the cost of the "Local" road equivalent.

STORM DRAINAGE PROJECTS

Regarding a storm drainage DCC program, "drainage facilities" have been interpreted, in practice, to include projects such as:

- preparation of master stormwater management plans;
- drainage rights-of-way and easement acquisition;
- large diameter storm sewer;
- major culvert crossings;
- overland flow routing systems;
- community retention/detention facilities;
- watercourse erosion protection works;
- lowland drainage improvements (including dyking); and,
- pumping stations.

An oversizing component can also be included in a storm drainage DCC program as an alternative to a Latecomer Agreement. For example, if a trunk sewer required to serve new development runs along a street, and this sewer also provides service to a land development project along the frontage, the incremental cost between the local and trunk requirements known as "oversizing" may be included in a DCC program. Meanwhile, the local sewer requirement is borne by the developer of the land.

SANITARY PROJECTS

For a sanitary DCC program, "sewage facilities" have been interpreted, in practice, to include projects such as:

- master sewerage planning;
- sanitary rights-of-way and easement acquisition;
- trunk sanitary sewer;
- relief sewers;
- facility oversizing;
- sewage lift stations; and,
- sewage treatment facilities.

Facility "oversizing" means the incremental cost between local and trunk requirements. For example, if a trunk sewer required to serve new development runs along a street, and this sewer also provides service to a land development project along the frontage, the developer is responsible for the local need. Only the oversizing component should be included in the sanitary DCC program.

Wastewater treatment facilities may also be included, if not the separate mandate of a regional district or greater board. Where the jurisdiction for wastewater treatment lies outside the municipality, separate DCCs can be imposed by that jurisdiction. In that case, the municipality will be governed by the regional DCC bylaw and shall simply collect and remit the funds to the regional district or greater board.

WATER PROJECTS

With regard to "water facilities," the legislation has been commonly interpreted to mean that a water DCC program may consist of water supply and distribution projects including:

- water distribution modeling;
- water rights-of-way and easement acquisition;
- trunk or grid watermains;
- facility oversizing;
- booster pump stations;
- reservoirs;
- water treatment facilities; and,
- pressure reducing valve (PRV) stations.

Similar to storm drainage and sanitary sewer, facility oversizing is the difference between the local and trunk requirements. Where a large diameter grid watermain fronts a land development project, and the same watermain also provides local service, the oversizing component may be included in a water DCC program. It is assumed that the cost of providing the local servicing need is paid by the developer of the land.

Similar to wastewater treatment, water treatment facilities may also be included, if such services are the responsibility of the municipality. Where separate DCCs are imposed by another jurisdiction, the municipality will simply collect and remit the funds to that body, such as a regional district or greater board.

PARKLAND ACQUISITION AND IMPROVEMENT PROJECTS

While section 933 (2) (b) of the *Local Government Act* generally mentions "providing" and "improving" parkland, sections 935 (3) (b) and 936 provide some clarification to the conditions that make parkland acquisition and improvements eligible for a parkland DCC program.

Regarding parkland acquisition, the land must have:

- a location and character acceptable to local government; and,
- a market value that is at least equal to the amount of the charge (section 936 (2)).

Regarding parkland improvements, works are limited to:

- fencing;
- landscaping;
- drainage and irrigation;
- trails;
- restrooms;
- changing rooms;
- playground equipment; and,
- playing field equipment (section 935 (3) (b) (ii)).

In practice, a parkland acquisition and improvement program is required, before parkland DCCs can be calculated. Not unlike the DCC programs for roads, drainage, sewer, and water, a strong relationship exists between the DCC bylaw and other municipal documents such as the OCP.

Given this setting, guidance for compiling a parkland acquisition and improvement program can come from the OCP, the Parks Master Plan, and/or other provisions found in the *Local Government Act*. The OCP often broadly specifies park, recreation, and open space objectives. Sometimes, even certain park sites might be described. Acceptable standards for active park and passive open space are usually defined in a Parks Master Plan.

In the same manner that storm drainage, sewer, and water can be constructed under Latecomer Agreements, there are means of funding parkland and open space acquisition other than through the use of DCC funds. Though not intended to be a comprehensive discussion, each are briefly described below to help clarify how a park acquisition program could be created for DCC purposes.

Section 941 of the *Local Government Act* provides the authority for local government to require land being subdivided to dedicate up to 5% of the parcel for parkland, or gives the owner the option to make an equivalent cash-in-lieu payment. This provision is applicable to any subdivision which creates three or more additional lots. Thus, parkland acquired in this manner must be taken into account when evaluating parkland requirements. Although not mandated by the legislation, some local governments waive the dedication requirement, or a "credit" is given towards parkland DCCs in the case that a program exists for parkland acquisition.

Section 879 (1) of the *Local Government Act* gives local government the authority in an OCP to designate areas within a Development Permit Area (DPA) for the protection of the natural environment and from hazardous conditions. This provision is generally used to preserve natural habitat and environmentally sensitive areas or to protect development from hazardous areas such as unstable slopes and flooding. Note that through the use of development permits, open space is protected from development and thus preserved, although not necessarily dedicated as municipal parkland. This method of parkland "acquisition" is most appropriate for unusable or undevelopable open space, rather than for active parkland space. Therefore, this type of land should not be included in a DCC program, as it could be obtained through DPAs or some other mechanism.

When compiling a parkland acquisition DCC program, DCCs should not be used to make up past deficiencies in parkland. For example, DCC funds should not be used to acquire parkland in an older area of the municipality which is not experiencing new development. In the case where a parkland deficiency exists, parkland acquisition funding must come from general revenue or means other than DCCs.

DCC monies may be used to acquire parkland in older areas experiencing redevelopment, such as the conversion of single family dwellings to multi-family developments. A local government can buy back municipally owned properties as parkland, if these lands would have otherwise been sold for development. DCC funds may also be applied to parkland that provides municipality-wide benefit derived as a result of new development experienced throughout the municipality.

Parkland DCCs are discussed further in Part II of the guide.

Recoverable DCC Costs

Further to the types of projects that are eligible for DCC programs, the recoverable DCC costs for those projects must also be considered. There is a strong correlation between the capital projects in the DCC programs and the Financial Plan. Therefore, cost estimates should be consistent with these plans.

According to the *Local Government Act*, section 935(4), the recoverable capital costs associated with DCC projects include planning, engineering, and legal. In practice, this section has been interpreted by the Ministry to include any or all of the following scope of capitalized activities:

- planning;
- public consultation;
- engineering design;
- right-of-way or parkland acquisition;
- legal costs;
- interim financing;
- contract administration;
- construction; and,
- contingencies.

RECOMMENDED BEST PRACTICE

DCC recoverable costs should be clearly identified in the DCC documentation and must be consistent with Ministry provisions.

Interim financing is the short-term debt financed by the local government prior to the receipt of contributions from other sources, such as government grants, and this financing cost is recoverable through DCCs.

Large DCC projects involving more than one utility or service, multi-year funding, and/or various funding sources can be broken down into separate phases to simplify DCC administration and accounting. Projects may be entirely or partly funded through DCCs, however in a revolving DCC program, costs should be included only for the phase(s) which are proposed in that time period.

As a matter of Ministry policy, inflation and long-term debt financing are not considered eligible for DCC recovery. However, section 935 (3) (c) of the *Local Government Act* does allow funds in DCC reserve accounts to be used to pay for the interest and principal on a debt resulting from DCC project costs.

Interest for DCCs in Exceptional Cases

Local Government Act – s. 932 (March 2004)

In 2004, a legislative amendment changed the definition of eligible "capital costs" in Section 932 of the *Local Government Act*, to include interest costs that are approved by the Inspector of Municipalities and directly relate to eligible DCC costs.

The Inspector of Municipalities will consider allowing interest costs in exceptional circumstances only. Each of the three circumstances identified below necessitates the construction of specific infrastructure projects in advance of sufficient DCC cash flows in order to trigger investment in development.

- Fixed-capacity infrastructure, such as water treatment and/or sewage treatment plants. These facilities may need to be constructed before growth can occur, and before adequate development cost charges can be collected.
- Out-of-sequence projects, such as upgrading the main sewer or water trunk lines, where construction is brought forward from the timing set out in the DCC program.
- Greenfield, which is usually providing infrastructure to areas that have no services, so growth can occur.

In these exceptional circumstances, local governments or developers will need to front-end the cost of the specific growth-related projects, and recover their costs through DCCs as growth occurs.

The mechanism for the local government to forward collected DCCs to the front-ending developer is a "DCC Front-Ender Agreement." This agreement is a legal contract between the local government and the developer. It states that the local government will pass on all DCCs related to the specific works to the developer that front-ends the cost of those works. The allowable interest provision allows the local government to add an interest component to the DCC rates payable by the other developers. By including interest in the DCC calculations for the specific works, some of the debt servicing costs incurred by the front-ending developer are spread over all benefiting growth.

CONDITIONS WHICH APPLY

To include interest charges in exceptional circumstances the following is required:

- a council/board resolution to include allowable interest;
- amendment of the DCC bylaw to include the specific interest charges;
- confirmation that the interest rate applied to the DCCs does not exceed the MFA debenture rate (regardless of the amount of interest that developers pay on the front-ending);

- if borrowing is undertaken, the DCC should reflect the actual borrowing rate (not a projected rate) if this is less than the MFA rate;
- confirmation that the amortization period for the interest costs does not exceed the DCC program time frame (i.e., the period of time over which the DCCs for the specific projects are to be collected); and,
- approval of the bylaw amendment after third reading by the Inspector of Municipalities.

It should be clear to the public and to developers when interest charges are included in the calculation of a DCC. This interest should be disclosed in the DCC report required by section 934 of the *Local Government Act* and reflected in the local government's Financial Plan, long-term capital plans and the annual financial statements.

If a local government does include an interest component in the DCC calculation then it should be applied to all DCCs levied for that project. If development proceeds faster than planned and the borrowing is paid out early in relation to a project, the DCC should continue to include the interest element so as to ensure that all development, past and future, is charged on an equitable basis.

In order to review and approve the amended bylaw that includes interest costs, the Inspector of Municipalities will require the following information:

- a clear indication that the DCC reserve fund for the works in question is in a negative cash flow position and that borrowing is required;
- demonstration that this is an exceptional circumstance;
- details of the interest rate and amortization period; and,
- evidence that the amendment has been disclosed to the public in the government's Financial Plan, financial statements and DCC report.

A local government's DCC program should be established in a way that limits the need for borrowing to exceptional cases, where the application of interest may be contemplated. The ability to add interest in certain cases should not be the deciding factor in a local government's decision to agree to front-end out-of-sequence and greenfield infrastructure costs. A reliance on front-ending exposes the local government to financial risk. The application of interest mitigates this risk, but does not eliminate it altogether.

Local governments should consider creating DCC sectors and sector-specific DCC reserves to isolate projects to which interest has been applied. The use of such sectors and associated reserves will increase the overall transparency of the approach, and will promote equity among developers who benefit from, and contribute to, the specific works.

RECOMMENDED BEST PRACTICE

The allowable interest provision should be contemplated in exceptional cases only. The provision is not intended to be applied to the local government's entire DCC program.

The *Development Finance Choices Guide* (Chapter 4) discusses the full range of influencing factors when local governments consider whether or not to front-end DCC funded infrastructure works.

Assist Factor

Section 933 (2) of the *Local Government Act* states that the purpose of DCCs is to provide funds to "assist" the local government to pay the costs of municipal parks and infrastructure. By not allowing 100% of the development related costs to be charged to new development, the legislation implicitly requires an "assist factor." As a matter of Ministry policy, a requirement exists for local government to provide a level of financial assistance. The municipal assist factor is separate from any allocation of costs made between new development and existing users. No guidance is provided by the Ministry as to the magnitude of the assist factor; some local governments have set it as low as one percent (i.e., 99% of the development related capital costs are borne through DCCs), while others have set it as high as 50%. This factor reflects Council's desire to encourage development and is largely a political decision, which is further discussed in the *Development Cost Charges Guide for Elected Officials.*

RECOMMENDED BEST PRACTICE

The municipal assist factor should be a reflection of the community's support towards the financing of infrastructure required to serve development.

The municipal assist factor may be amended from time to time to ensure that the DCC program does not deter development, however each adjustment will require a bylaw amendment and approval from the Inspector of Municipalities.

Although council has the flexibility to use the municipal assist factor as a political instrument, Ministry policy does limit how the assist factor is to be applied in two ways. The factor can only be varied between different categories of infrastructure. For example, an assist factor of 10% could be applied to roads, while 5% could be applied to sanitary sewer. In addition, the factor must be consistent within that category of infrastructure or specified service area. As an illustration of this point, road DCCs for all land uses must have the same assist factor; for example, a municipality could not offer 10% assistance for single family lots and 25% assistance to commercial developments (nor 10% to Area A and 25% to Area B). These limitations have been placed on the assist factor, as it was not designed as a tool to encourage or discourage any category of development over another.

CRITERIA FOR DECISION-MAKING

While council is ultimately responsible for setting the municipal assist factor, the following points are suggested for consideration:

- Varying municipal assist factors between different types of infrastructure may complicate tracking and ensuring the municipal contribution at the accounting level.
- Although excessive DCCs are obviously of concern (section 934 (4) (d)), DCCs should be calculated using the best technical information possible. If as a consequence of this process, the resulting charges are deemed to be too high, the assist factor can then be applied by council to reduce the rates to a level that is politically acceptable.
- A high assist factor could be used to encourage housing affordability.
- The total municipal contribution to projects is the sum of the component not attributed to new development (amount representing benefit to existing users), the portion of costs associated with types of development which are exempt from DCCs, and the assist factor. Therefore, a high assist factor has direct impact on municipal finances, and the contribution must be made up by the existing tax base through general revenue as long-term debt, utility rates, etc.
- The municipality cannot afford its share of the costs, development may be delayed. If this scenario is anticipated over the long term, it should be used to inform a future review of the OCP.

CHAPTER THREE
Bylaw Administration

CHAPTER 3 – Bylaw Administration

Once the Inspector of Municipalities has granted the DCC bylaw statutory approval and a council or regional district board has adopted the bylaw, ongoing administration will be required. This chapter describes a number of policy considerations associated with the continued use and maintenance of the DCC bylaw, namely the collection of charges (upon subdivision approval or building permit issuance), monitoring and accounting, grace periods and in-stream applications, credits and rebates, and the process for bylaw amendment.

Collection of Charges

Section 933 (5) of the *Local Government Act* states that DCCs are payable at the time of approval of subdivision or at the issuance of a building permit, as the case may be. In practice, DCCs are commonly collected:

- at the subdivision approval stage, or at the building permit stage for single family charges;
- upon issuance of a building permit for multi-family, commercial and institutional DCCs; and,
- at subdivision approval or building permit issuance for industrial DCCs.

Further, section 933(6) allows the Minister to authorize (by regulation) the payment of DCCs in instalments and prescribe conditions under which instalments may be paid. BC Regulation 166/84, Development Cost Charge (Instalments) Regulation outlines specific details of the timing of DCC payments by a developer based on three equal instalments (see Appendix B).

COLLECTION AT SUBDIVISION APPROVAL

As the required trunk services must be constructed before buildings are connected, local government would prefer to impose all DCCs at the time of subdivision approval. Payment at this time allows funds to accumulate earlier in the development process and supports the notion that local government should not have to front end the costs of installing infrastructure needed to service new development.

Levying DCCs at this point coincides with when funds are needed to install the required services, although in fact, a "flow through" of funds serves to offset this need somewhat.

In addition, the advantage of in-stream protection is provided to those paying DCCs at subdivision approval. When a DCC bylaw is adopted, section 943 of the *Local Government Act* offers a twelve month protection period for in-stream applications from the effects of the new bylaw. This provision is described later in this chapter.

Subdivision approval is typically a convenient stage for a municipality to collect the charges for single family development (and duplex).

Further, it is a logical time, if the lots are predominantly created by subdivision (e.g., greenfield developments). Frequently at this point in the development process, only the total area of the subdivision and the number of lots created are known. Most likely, the building areas of the units have not yet been finalized. Therefore, if single family DCCs are levied on a per lot or per lot area basis, the total DCCs can easily be levied at subdivision approval. If single family DCCs are levied according to floorspace, the total DCCs payable would be difficult to determine at subdivision, as the information would not be readily available.

Local governments now have the authority to charge DCCs at the building permit stage for projects with under four units. The following section on collection at building permit issuance discusses the benefits of charging DCCs at building permit stage for single family, duplex and triplex developments.

Despite the municipality's preference, collecting DCCs at the subdivision approval stage may not be possible for other land uses. Multi-family subdivisions do occur, but the actual yield of dwelling units may vary greatly, depending on zoning regulations. Thus, it may be impractical to assess multi-family DCCs at subdivision approval, regardless of whether the charges are based on dwelling units or building area.

Commercial and industrial subdivisions can also occur, and non-residential DCCs are commonly charged on an area basis. If these charges are based on gross site area, the total DCCs could be calculated at subdivision approval. If the charges are based on building area, it may be impractical to collect DCCs upon subdivision approval, as once again, the building area may not be known. Institutional subdivisions are very rare, and DCCs are unlikely to be charged at the subdivision point of the development process.

It is noted that non-residential developers often do not completely develop their sites all at once. Therefore, it may be unfair to require DCCs for the entire site to be paid at subdivision, when the first stage of site development is constructed. On the other hand, the required services may be installed several years before any building proceeds. Despite the flow through of funds, the municipality may be effectively front ending the capital improvements, if the charges are collected at building permit stage.

COLLECTION AT BUILDING PERMIT ISSUANCE

The development industry strongly supports deferral of all DCC payments to at least the building permit stage. The development industry believes that building permit issuance is a logical time for DCCs to be paid, as other fees are paid at this stage as well.

With the ability of local governments to charge DCCs at the time of building permit issuance for permits associated with construction of less than four dwelling units, payments of DCCs can be deferred

from subdivision approval to building permit stage. This provides an opportunity to levy single family (duplex and triplex) DCCs at the issuance of a building permit.

RECOMMENDED BEST PRACTICE

DCCs for multi-family and non-residential land uses should be collected at the time of building permit issuance.

RECOMMENDED BEST PRACTICE

DCCs for single family developments should be collected at the time of subdivision approval, unless a local government chooses to charge projects with less than four units, and then consideration should be given to charging on the basis of floorspace at the building permit stage.

For non-residential land uses, the "less than four" exemption does not apply (section 933 (4) (b) (ii)). DCCs should be collected upon issuance of building permit, since the representative unit upon which DCCs are frequently levied (i.e., floorspace) allows the total charges to be easily calculated at this point in the development process.

Monitoring and Accounting

Section 937 (5) of the *Local Government Act* states that the Inspector of Municipalities may require local governments to provide a report on the status of DCC collections, expenditures, and proposed expenditures. Further, a transfer of funds from a DCC reserve fund to a capital works reserve fund may be ordered (section 937 (6)). In fact, the Inspector of Municipalities has the power to revoke statutory approval of the DCC bylaw, if things are not found to be in order.

Section 935 (1) of the Act stipulates that DCCs shall be deposited in a separate special DCC reserve fund established for each purpose, for which a local government imposes a charge. The monies collected (together with reserve fund interest) shall then be used to pay for the capital projects within a DCC program, with one minor exception. Section 936 (6) implies that the interest earned on parkland DCCs may be used for parkland improvements, not directly or indirectly related to new development.

In practice, ongoing administration of the DCC bylaw should be guided by the principles of transparency in the process and integrated implementation. Monitoring of DCC funds and accountability as to their use are largely achieved through good accounting and monitoring practices that are clear and understandable.

RECOMMENDED BEST PRACTICE

A DCC monitoring and accounting system should be set up such that tracking of projects and the financial status of DCC accounts can easily be facilitated.

DCC accounts should be set up in a manner that assists in tracking of projects, capital expenditures, sources of funding, and status of completion. Identification numbers given to each capital project in the DCC program may help facilitate ongoing administration of the bylaw. Tools such as spreadsheets are also helpful. The DCC accounting system should be able to report:

- how much money has been collected from DCCs;
- the amount of government grants received towards DCC projects;
- amounts designated as DCC "credits" or "rebates"; and,
- the amount of funds representing the local government share of project costs in the DCC program.

Thus, a good DCC accounting system will indicate whether sufficient DCC funds are being collected to complete the DCC program in accordance with development projections (and indeed to determine if the OCP is being achieved). Early indication of inadequate/excess DCC funds will allow local governments to respond with adjustments to their servicing plans.

Thus, tracking and monitoring of DCCs should be facilitated by management and financial reports generated by the accounting system. These reports will be used as fundamental inputs to the bylaw amendment process (discussed further in this chapter) involving:

- identification of completed projects;
- addition of new projects;
- interest earned;
- variation between revised projections and earlier forecasts;
- reconciliation of figures; and,
- revision of project costs.

Use of Reserve Funds

Community Charter – s. 189 (Sept 2004)

Another 2004 legislative amendment authorizes local governments to lend available money in one DCC reserve fund to another DCC reserve fund on a temporary basis. This allows an alternative to external borrowing in circumstances where a reserve fund balance is not sufficient to finance a particular capital project but where there is sufficient money available in another reserve fund to finance the project.

DCC reserve funds are accounted for on a significantly different basis than are other reserve funds. Therefore, local governments need to ensure that the source of inter-fund borrowing for a DCC reserve fund is another DCC reserve fund and that DCC reserve funds are not used as a source of temporary financing for non-DCC reserves. Local governments also need to be cognizant of the temporary nature of these inter-fund transfers and the legislative requirement to ensure that the money, and appropriate interest, is returned to the original reserve fund before it is needed in that fund.

Grace Periods and In-stream Applications

When a municipality implements or amends a DCC bylaw, developers or those parties paying DCCs will be affected by the new charges. For a developer, project funding is usually arranged early in the development process (even before rezoning, if required). Therefore, stability of DCC rates and how projects in progress are affected have a great impact on the viability of land development. A valid subdivision or building permit application would pay the DCC rates applicable at the time of application.

Grace periods and in-stream applications are important policy issues which should be considered when administering a DCC bylaw. Since DCCs may be imposed upon approval of a subdivision or upon authorization of a building permit, guidelines should be established with respect to how grace periods and in-stream applications will be handled in each situation.

GRACE PERIODS

A grace period is a length of time offered as notification that new DCCs will be in effect. For example, the DCC bylaw may state that the effective date will be a time period (e.g. up to a year) from the date of DCC bylaw adoption. The grace period is granted by a municipality as an acknowledgement of the impact DCCs may have on the development industry.

RECOMMENDED BEST PRACTICE

A suitable period of notification before a new DCC bylaw is in effect, known as a grace period, should be considered when establishing DCC rates.

SUBDIVISION APPLICATIONS

Section 943 of the *Local Government Act* provides in-stream protection of one year from the proposed DCC rates for subdivision applications, provided that the application is complete and that subdivision application fees have been paid. In other words, given a scenario where the proposed DCCs have increased from the existing charges, an in-stream and active subdivision application will be exempted from the increased DCCs for one year from the date of adoption of the new bylaw. Although different local governments may have different requirements regarding what constitutes a complete application, one feature required to be eligible for the one year statutory exemption is that the application must be accepted for processing by the municipality's Approving Officer. If the developer has received a Letter of Conditional Approval of subdivision (or equivalent, such as "Preliminary Layout Approval"), section 943 also applies.

The proposed DCCs will apply to subdivisions under the following conditions:

- where an application has been denied;
- where Conditional Approval has lapsed during the one year exemption period; or,
- where final approval of subdivision has not been received prior to the anniversary date of the new bylaw.

It is noted that developers of multi-phased subdivisions should be especially aware of significant dates such as the date of DCC bylaw adoption, the bylaw's anniversary date, and the expiry date attached to the Letter of Conditional Approval.

BUILDING PERMIT APPLICATIONS

There are no *Local Government Act* provisions governing building permit applications similar to the in-stream protection offered to subdivision applications. Unless specified differently in a municipality's Building Permit Bylaw, the amount payable is determined in accordance with the rates applicable at the time of building permit application. Again, it is important for the applicant to note what constitutes a valid application, which may vary with different local governments.

As a result of recent legal case history, the in-stream protection policy for building permits is being reviewed by many local governments. Firstly, the courts have concluded that the date which the appropriate

DCCs should be calculated is the date that sufficient information is available to issue the permit and not necessarily the actual date of building permit issuance.[1] Secondly, there is legal precedent which indicates that exemption from the bylaw on an arbitrary basis (such as an in-stream application) is discriminatory to other developers who do not meet that criterion.[2]

Historically, some local governments have chosen to offer in-stream protection for building permits from increased DCC rates resulting from a new DCC bylaw or bylaw amendment. However, the ruling of Acamar v. City of Surrey (1997) confirms the view that section 943 only applies to subdivision applications.[3]

The grace period should not be confused with in-stream protection. The former only serves to allow enough time for people to be notified of the new DCC rates; as it relates to building permit applications, the latter seeks to provide preferential treatment to developers meeting a certain time criteria.

Credits and Rebates

There are no specific references to "DCC credits" or "DCC rebates" in the *Local Government Act*. However, the intent of Section 933 and specifically clause (8) is that developers providing trunk services beyond the development shall have those costs deducted from the applicable DCCs payable. To implement the provisions of the legislation, the concepts of a "DCC credit" and a "DCC rebate" are introduced. Policies regarding when a municipality should offer a credit versus a rebate should be carefully considered. In either case, the DCC accounting system should allow credits and rebates to be monitored and tracked.

RECOMMENDED BEST PRACTICE

A municipality should carefully consider the situations where a DCC credit or rebate will be given.

DCC CREDITS

As discussed in the previous chapter on bylaw development, DCC programs are established in support of broader community plans. New development projections should be made in relation to OCP objectives. The DCC program should be compiled to service the new development in an orderly manner, and the capital projects

[1] Coho Creek Estates Ltd. V. District of Maple Ridge. (Supreme Court of B.C., Vancouver Registry No. C901800I)

[2] 356226 British Columbia v. City of Vancouver. (Supreme Court of B.C., Vancouver Registry No. C920828.

[3] Aamar Stoney Creek Development Inc. v. Surrey (City). (Supreme Court of B.C., Vancouver Registry No. A950192)

should be a subset of the Financial Plan. Underlying the DCC calculations are various assumptions regarding the cost and timing of capital projects.

Despite the above, a situation may arise where a developer desires to proceed with a greenfield land development before the required trunk services are installed in that area. This type of development can be considered to be "out of sequence." An out of sequence development should be carefully weighed in light of growth management objectives in the OCP. If the development is contrary to the objectives in the OCP, or if the municipality cannot afford the financial burden of additional infrastructure requirements, the Approving Officer of the municipality may seriously consider declining that development for the present time. If it is deemed that the out of sequence development should proceed, some flexibility may be available to accommodate the capital costs, depending on whether the charges have been implemented on a municipal-wide or area-specific basis. Another means of facilitating the development would be to require the developer to construct the necessary trunk services. The burden imposed on the developer by front ending the capital costs of these services, is essentially the consequence of "advancing history."

In this case, the out of sequence development would be offered a DCC credit. In other words, the costs of constructing the required trunk works and services in advance of the proposed timing, would be deducted from what otherwise would have been the applicable respective DCCs payable, but the DCC credit could not exceed the applicable DCC payable. For example, if the developer constructed a section of trunk sewer, the associated costs would be deducted from his sanitary DCCs, to the maximum DCC amount payable.

DCC REBATES

In the previous chapter on project eligibility, it was noted that facility oversizing was eligible for DCC cost recovery. In other words, the component of the capital costs between local and trunk requirements can be included in the DCC program. It is expected that developers would be responsible for the costs of providing the services to a local standard.

In the case where a developer wishes to proceed with a development before the trunk services fronting his property are installed in that area, a municipality might allow the developer to construct the required works to a trunk standard. Then, the municipality would offer a DCC rebate for the incremental portion of costs beyond the local requirement. Thus, the *Local Government Act* provisions prohibiting double charging are honoured.

Process for Bylaw Amendment

The average cost of a typical unit of development should not change significantly over time except for the effects of inflation or changes in standards, if development projections are accurate. However, due to the periodic revision of the OCP, the municipality's financial situation, changing infrastructure needs, and a host of other factors affecting new development which are beyond local government control, the DCC bylaw will require amendment from time to time.

The process for bylaw amendment is essentially the same as initial bylaw development (as discussed in previous chapters). Amendments to a DCC bylaw are also governed by the procedures outlined in section 937 of the *Local Government Act*, including the requirement for approval from the Inspector of Municipalities. In general, there are two levels of amendment - a minor adjustment to DCC rates to reflect inflation and a major DCC review.

MINOR DCC AMENDMENT

A minor amendment to the DCC bylaw is basically an adjustment to the charges to reflect current construction costs, fluctuations in land values, and the status of government grants. It is suggested that this type of amendment could be made annually following the annual review of the Financial Plan.

RECOMMENDED BEST PRACTICE

Minor amendments to the DCC bylaws should be made annually to reflect changes in construction costs, land values, and the status of government grants.

The following process has been used for minor update of DCCs to reflect inflation:

- prepare average unit rates from all the lowest bid construction tenders received during a calendar year;
- prepare year to year land price adjustments for parkland and road widening strips;
- apply these rates to a standardized generic construction project (e.g. an arterial road widening project);
- compare overall total costs between one year and the next to determine cost changes;
- apply appropriate cost change factors to the capital cost within the DCC calculation and recalculate the DCCs; and,
- submit revised bylaw to the Inspector of Municipalities for a minor bylaw amendment review.

Any proposed inflation adjustment methodologies must be pre-approved by the Ministry. The process outlined on the previous page would be deemed reasonable by the Ministry. Please note that the Consumer Price Index cannot be justified for use as an inflation adjustment factor. It is suggested that changes in construction costs could be reflected using a construction index such as the Composite Southam Construction Cost Index, the Engineering News Record Cost Indexes, or Statistics Canada Quarterly, Construction Price Statistics. This type of bylaw amendment would still require statutory approval. However, due to the nature of the adjustment, it is anticipated that approval of the bylaw amendment would be expedited.

MAJOR DCC AMENDMENT

A major bylaw amendment involves a full review of the DCC methodology including:

- underlying DCC assumptions;
- broad policy considerations;
- development projections;
- DCC program costs;
- timing of proposed capital projects;
- addition of new projects to the DCC program, where necessary; and,
- deletion from the DCC program of those capital projects that have been completed or are no longer required.

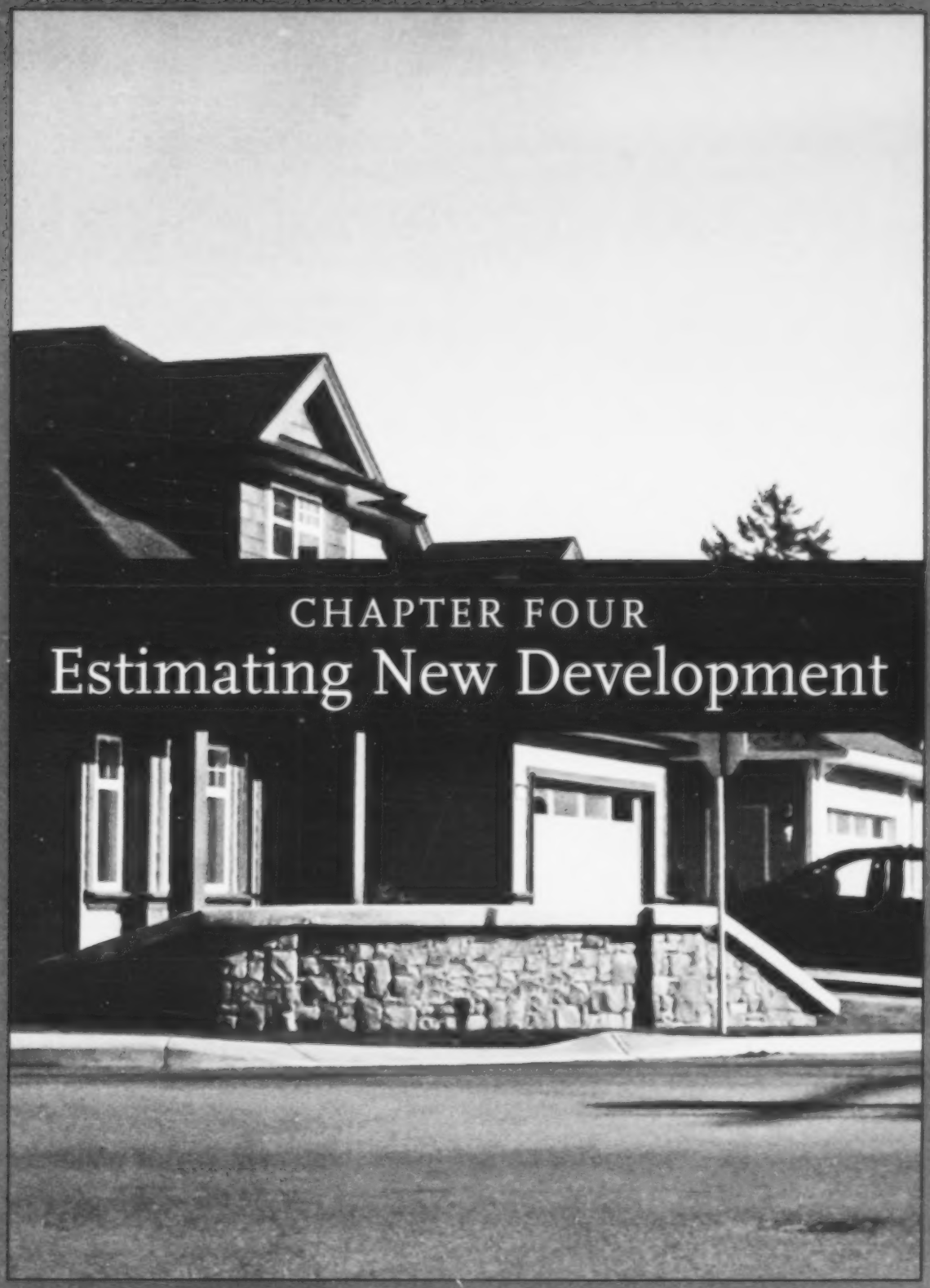
It is anticipated that a major DCC bylaw amendment is not required more often than once every five years, unless conditions which form the basis for the bylaw change. As DCCs are strongly linked to the OCP, a suitable opportunity for a full review of DCCs would be immediately following an OCP review. In fact, there is merit in building into a municipality's strategic planning process a framework for sequential review of the OCP, the capital planning process, and the DCC bylaw. Two events which may trigger the need for a major review are:

- when a major change in DCC assumptions has occurred; and,
- when DCC revenues/expenditures deviate from projections by a certain established percentage.

RECOMMENDED BEST PRACTICE

Major amendments to the DCC bylaws should be completed at least once every five years and involve a full review of DCC issues and methodology

In a municipality where an ongoing public process has been established for addressing DCC issues, such as a DCC Advisory Forum, this group would provide valuable assistance in completing a comprehensive review.



CHAPTER FOUR
Estimating New Development

DCCs are generally determined by dividing the net cost of capital expenditures attributable to new development over a certain time period, by the corresponding number of projected development units or area that will be developed in that same time period. Therefore, one of the key calculations in establishing DCCs is the estimation of new development. This chapter describes prerequisite policy decisions required and the information needed prior to the projection of new development units. Procedures are presented for estimation of residential and non-residential development. Where possible, alternative methods of calculation are presented, and a recommended best practice is suggested.

Prerequisite Policy Decisions

The calculation of new development units will depend on how the policy issues described in Part I have been considered. Before calculations can proceed, the following questions must first be answered satisfactorily.

- How extensively will DCCs be applied, on a municipal-wide basis or area-specific basis?
- What time frame will be established for the DCC program (i.e., on a revolving or buildout basis)?
- What categories of development will be charged (e.g., residential, non-residential)?
- How detailed will land uses be broken down (e.g., the range of residential and/or non-residential land uses)?
- What units will be used to calculate DCCs (e.g., lots, dwelling, units, floorspace)?

Sources of Background Information

Sources of data and background documents which provide information to determine development projections include:

- Official Community Plans (OCP);
- Zoning Bylaws;
- BC Stats;
- BC Assessment Authority (BCAA);
- Census information;
- Local Health Area data;
- information contained in Tax Rolls;
- Building Permit statistical information;
- municipal development statistics; and,
- Economic Development Reports or Retail Market Studies.

The background documents can yield information on demographic assumptions, projected number of residential units according

to a certain housing stock mix, projections for non-residential development in terms of area absorbed per year, and areas designated for specific types of land use.

New Development Projections

Having made the prerequisite policy decisions and located the available background information, new development projections can be made for residential and non-residential land uses.

As a minimum, residential should include single family and multi-family, while non-residential should include commercial, industrial, and institutional.

The following sections present various methods of calculation to project new development. The approaches could also be adopted for a more detailed breakdown of land uses than what is shown. For example, development categories could include duplex or mobile home pads for residential, service commercial or office commercial, light industrial/warehousing or heavy industrial/manufacturing, and schools for non-residential.

PROJECTED RESIDENTIAL DEVELOPMENT

In the examples described below, the calculations are based on the following policy decisions having been made:

- municipal-wide application of DCCs;
- a revolving ten year time frame; and,
- residential DCCs according to dwelling units.

It is noted that the calculations could be adjusted for an area-specific DCC, a buildout time frame, and/or residential DCCs according to floorspace.

Further, residential land uses are expressed as a density gradient in the following ranges, as opposed to building forms (see Chapter 2 for fuller discussion of this recommended best practice). The density gradient below differs from that suggested in Chapter 2:

- less than 15 D.U. (dwelling units) per hectare (instead of single family);
- 15 up to 44 D.U. per hectare (instead of townhouse);
- 44 up to 74 D.U. per hectare (instead of low rise apartment); and,
- 74 or greater D.U. per hectare (instead of high rise apartment).

Of course, each municipality would determine the number of, and limits between, density categories appropriate to their community, and the above ranges are shown only to provide some basis for the following examples.

Two approaches to residential development projections are presented: the first involves modification of the population projection, while the latter does not directly consider population figures.

Modified population growth method

Where population is considered a proxy for the need for infrastructure improvements, this method seeks to determine how much population growth is a result of new development units, as provided by the OCP.

It is noted that "new development" is often incorrectly referred to as "growth." However, growth in population may not always result in additional residential units, and there are subtle distinctions between the two terms. Growth can occur in existing development due to:

- replacement housing (represented by building permits for less than four dwelling units and/or less than $50,000 in value) unless otherwise varied by local government bylaw or provincial regulation;
- occupancy of unaccounted "in-law" suites; and,
- occupancy of illegal secondary suites.

It has been argued that natural increase (i.e., births minus deaths) does not result in new developments either, but presumably the rate of natural increase is the same in existing dwellings as new housing units.

The portion of population increase that may not translate into new residential development could possibly be quite sizeable, depending on a municipality's circumstances. The significance of this factor could be determined by comparing building permit records and occupancy rates to population figures. Even if there is insufficient information to accurately determine the impact, this phenomenon should be acknowledged. Therefore, the "modified population growth" method for projecting residential development includes an allowance for the component of the total population growth that does not result in new development projections. This percentage is referred to, as "F" Example 4.1.

The following information is required from the background planning documents to project the amount of residential development units:

- the anticipated annual population growth rate;
- the housing stock composition; and,
- occupancy rates at different dwelling unit densities.

Based upon an anticipated annual growth rate, a population projection can be made for a specified time period (ten years, as shown in the example). The anticipated growth rate(s), is (are) commonly stated in the OCP. For the purposes of DCC calculations, a conservative projection of the population is desired. The impact

of overestimating growth is that revenues will be overstated in comparison to the amounts actually received, and sufficient funds will not be realized to implement necessary projects. The challenge in making development projections in the case of a buildout program is how best to account for the fact that many areas do not develop to the full density permitted by the OCP or Zoning Bylaw.

Dwelling and household characteristics are often found in the OCP, Census data, or municipal development statistics. As occupancy rates may be sensitive to the actual neighbourhood, the use of local data should be employed in calculating DCCs. For illustrative purposes only, typical ranges of housing stock proportion are shown in Table 4.1, and typical ranges of occupancy rates are shown in Table 4.2.

TABLE 4.1 – Typical Ranges of Housing Stock Composition

Density Gradient	Proportion of Total Housing Stock
< 15 D.U./ha (similar to Single Family)	60% - 75%
15 up to 44 D.U./ha (similar to Townhouse)	10% - 30%
44 up to 74 D.U./ha (similar to Low Rise Apartment)	10% - 15%
74 and greater D.U/ha (similar to High Rise Apartment)	0% – 5%

TABLE 4.2 – Typical Ranges of Occupancy Rates

Density Gradient	Occupancy Rate
x < 15 D.U./ha (similar to Single Family)	3.2 – 3.5 persons per unit (ppdu)
15 < x < 44 D.U./ha (similar to Townhouse)	2.4 – 2.8 ppdu
44 < x < 74 D.U./ha (similar to Low Rise Apartment)	1.7 – 2.0 ppdu
74 < x D.U./ha (similar to High Rise Apartment)	1.4 – 1.7 ppdu

Thus the projected residential development units for four gross density ranges can be estimated as shown in Example 4.1 below.

EXAMPLE 4.1 – Projected Residential Development Units
Modified Population Growth Method

Year	Population
0	76,550
1	77,469
2	78,398
3	79,339
4	80,291
5	81,255
6	82,230
7	83,216
8	84,215
9	85,226
10	86,248
P=	9,698 persons

$P_{effective}$ = P x (1 - F)
= 9,698 x (1 - 0.05)
= 9,213 persons
U_{15} = 0.6U
U_{44} = 0.25U
U_{74} = 0.1U
U_{74+} = 0.05U

$P_{effective}$ = $(R_{15} \times U_{15}) + (R_{44} \times U_{44}) + (R_{74} \times U_{74}) + (R_{74+} \times U_{74+})$
= (3.2 x 0.6U) + (2.5 x 0.25U) + (1.7 x 0.1U) + (1.4 x 0.05U)
2.785U
9,213 = 2.785U
U = 3,308 units

Therefore:
# of units, x < 15 D.U/ha = 1,985
# of units, 15 < x < 44 D.U./ha = 827
# of units, 44 < x < 74 D.U./ha = 331
# of units, 74 < x D.U/ha = 165

GIVEN:

Ten Year Population Increase = P
% Growth Not Part of Development = F

Effective Population = $P_{effective}$
Total Residential Units = U
# of units, x < 15 D.U./ha = U_{15}
# of units, 15 < x < 44 D.U./ha = U_{44}
# of units, 44 < x < 74 D.U./ha = U_{74}
# of units, 74 < x D.U./ha = U_{74+}
Occupancy Rate for U_{15} = R_{15}
Occupancy Rate for U_{44} = R_{44}
Occupancy Rate for U_{74} = R_{74}
Occupancy Rate for U_{74+} = R_{74+}
Assumptions:
Time Period (yrs) = 10
Annual Growth Rate (%) = 1.2
Base Year Population = 76,550
F = 5%

Proportion of U_{15} = 60%
Proportion of U_{44} = 25%
Proportion of U_{74} = 10%
Proportion of U_{74+} = 5%

R_{15} (ppdu) = 3.2

R_{44} (ppdu) = 2.5

R_{74} (ppdu) = 1.7

R_{74+} (ppdu) = 1.4

Development Cost Charges According to Floor space

As stated in Part 1 of this guide, recent legislative amendments allow local governments to levy DCCs at the building permit phase of a development authorizing the construction, alteration or extension of fewer than four self-contained dwelling units. This change will allow residential DCCs to be levied on a floor space (square metre or square footage) basis at building permit stage; thus promoting more efficient land development through smaller and more affordable housing.

If the municipality wishes to levy the DCC at the building permit stage based on building floor space, the model can convert the number of units into the amount of estimated residential floor space based on a conversion formula.

It is important to note that a floor-space model is more appropriate for communities that are building a variety of types of units. This method is not recommended for communities that are primarily building low density single family dwellings. Also, this approach is not recommended for communities with limited new development because the sample for calculating or applying the average floor-space will be quite small. For the same reasons, the floor-space approach should not be used for area-wide DCCs unless the area represents a significant portion of the local government boundaries.

The range of floor-space for each type of residential development is listed as follows based on a sample of municipalities in British Columbia.

EXAMPLE 4.1A – An Addendum to EXAMPLE 4.1

		Floor-space Range (Sq Meters per residential unit)		
Area Class A = Floor Space in Square Metres	Unit Type	Low	Medium	High
A_{15}	Low Density (SFD)	140	205	280
A_{44}	Medium Density (Townhouse)	110	150	175
A_{74}	High Density (Low & Mid-Rise)	75	85	110
A_{74+}	High Density (High Rise)	55	70	85

The above table provides a range of conversion factors. These factors convert building units to square metres.

Typically, more urbanized communities reflect the low to medium range. Rural and lifestyle communities may use the higher range because these communities have fewer land constraints.

Given the variance that exists in floor-space, municipalities should consider sampling the average size of newly constructed units within their boundaries. This is especially important for resort communities because of the diverse range of developments within their boundaries. Representative figures may be ascertained from municipal building permit information. If this data is not available, the local government may attempt to develop representative figures through discussions with local builders, and the local chapter of the Canadian Home Builders Association.

Average floor-space in a community may fluctuate over time with changes in the market and building trends. Thus, the estimated conversion factors may require periodic review.

Area Conversion

U_{15} x A_{15}	1,985 Units x	205 Sq M/Unit	= 406,925	Sq Metres
U_{44} x A_{44}	827 Units x	150 Sq M/Unit	= 124,050	Sq Metres
U_{74} x A_{74}	331 Units x	85 Sq M/Unit	= 28,135	Sq Metres
U_{74+} x A_{74+}	165 Units x	70 Sq M/Unit	= 11,550	Sq Metres

Conversion of Population per Unit to Population per Square Metre

R_{15} / A_{15}	3.2 ppdu /	205 Sq M/Unit	= 0.0156	People per Sq M
R_{44} / A_{44}	2.5 ppdu /	150 Sq M/Unit	= 0.0167	People per Sq M
R_{74} / A_{74}	1.7 ppdu /	85 Sq M/Unit	= 0.0200	People per Sq M
R_{74+} / A_{74+}	1.4 ppdu /	70 Sq M/Unit	= 0.0200	People per Sq M

The development and population variables calculated above are applied in Example 7.5(A) Sewer DCC Calculation. Although not shown in the guide, the above factors can be applied to calculate floor-space DCCs for all types of infrastructure (roads, parks, water and drainage). Simply apply the above variables into Examples 7.2, 7.3, 7.7, and 7.8.

Development potential method

This method projects the amount of residential development on the basis of development potential. As a result, no direct link is made to a growth rate, and population is only implicitly considered in this approach.

This method is particularly suited to local governments where new development almost exclusively occurs in "greenfield" sites. In other words, this approach is difficult to apply in local governments experiencing significant redevelopment. For each of the gross density ranges being considered as a residential charge category, the total number of dwelling units can be determined from the Zoning Bylaw, given the total area for the respective density ranges, as designated in the OCP. Assuming that the OCP is to be achieved over some period of time greater than the DCC time period, the number of units can be prorated for the purposes of DCC calculations, as shown in Example 4.2.

EXAMPLE 4.2 – Projected Residential Development Units
Development Potential Method

Units = Area x Avg. gross density x (Time Period/OCP Buildout)

Therefore,

U_{15} = A_{15} x 10 x (10/25) = 496 x 10 x (10/25) = 1,984

U_{44} = A_{44} x 30 x (10/25) = 69 x 30 x (10/25) = 828

U_{74} = A_{74} x 60 x (10/25) = 14 x 60 x (10/25) = 336

U_{74+} = A_{74+} x 75 x (10/25) = 5.5 x 75 x (10/25) = 165

Summary:

# of units, x < 15 D.U./ha = 1,984
# of units, 15 < x < 44 D.U./ha = 828
# of units, 44 < x < 74 D.U./ha = 336
# of units, 74 < x D.U./ha = 165

GIVEN:

# of units, x < 15 D.U./ha = U_{15}
# of units, 15 < x < 44 D.U./ha = U_{44}
# of units, 44 < x < 74 D.U./ha = U_{74}
# of units, 74 < x D.U./ha = U_{74+}

Area in OCP/Zoning Bylaw designated < 15 D.U./ha = A_{15}

Area in OCP/Zoning Bylaw designated 15 < x < 44 D.U./ha = A_{44}

Area in OCP/Zoning Bylaw designated 44 < x < 74 D.U./ha = A_{74}

Area in OCP/Zoning Bylaw designated 74 < x D.U./ha = A_{74+}

Assumptions:
Avg. gross density of A_{15} = 10 D.U./ha
Avg. gross density of A_{44} = 30 D.U./ha
Avg. gross density of A_{74} = 60 D.U./ha
Avg. gross density of A_{74+} = 75 D.U./ha
A_{15} = 496ha
A_{44} = 69ha
A_{74} = 14ha
A_{74+} = 5.5ha
Time Period (years) = 10
OCP Buildout (years) = 25

Projected Commercial and Industrial Development

In the following example, calculations for commercial and industrial development, the required policy decisions have been presumed:

- municipal-wide application of DCCs;
- a revolving ten year time frame;
- commercial DCCs according to floorspace; and,
- industrial DCCs according to gross site area.

It is noted that the calculations could be adjusted for an area-specific DCC, a buildout time frame, and/or DCCs according to other area-based measures.

Two approaches to commercial and industrial development projections are presented: the first involves linkage to population growth, while the latter considers only development potential.

POPULATION GROWTH METHOD

This approach assumes a correlation between the need for commercial/industrial floorspace and population growth. This method uses the historical rate of commercial and industrial development as the basis for projection into the future. This approach is appropriate for isolated local governments where most commercial and industrial activity exists to service the community's population, given that the municipality has enough appropriately designated lands to accommodate future growth needs.

Past floorspace figures can be obtained from building permit records. For the corresponding population, a per capita floorspace can be calculated, and this figure can be multiplied by the DCC time period to obtain a projection of the estimated gross floor area.

For example, suppose a review of building permit records revealed total annual commercial floorspace developed, as shown in Table 4.3. The historical floorspace per capita can be calculated by dividing the total area by the corresponding population for those years (perhaps from Census data) which is also shown in Table 4.3.

TABLE 4.3 – Historical Commercial Per Capita Floorspace Example

Year	Total Floorspace (m^2)	Corresponding Population	Floorspace per Capita (m^2/capita)
1991	374,145	71,678	5.2
1995	416,562	76,550	5.4

Given the historical trend, it might be assumed that the per capita floor area for the DCC program would be an average of the figures, and the projected floor area over the DCC time period can be estimated. This calculation is shown in Example 4.3.

EXAMPLE 4.3 – Commercial Floorspace Projection Population Growth Method

Use an average of the previous per capita gross floorspace figures as a basis for next ten year period. R = (5.2 + 5.4)/2 = 5.3m²/capita C = P x R = 9,698 x 5.3 = 51,399m² floorspace	GIVEN: Ten Year time Period for DCC Program Ten Year Population Increase = P Commercial Floorspace per Capita = R Ten Year Commercial Floorspace = C Assumptions: 1991 Gross Floorspace per Capita = 5.2m²/capita 1995 Gross Floorspace per Capita = 5.4m²/capita Projected Ten Year Population Increase = 9,698 persons

The same approach could be adopted for industrial development. If in this case, the DCC is based on gross site area, an average site coverage in percent can be assumed to convert building area, in square metres to gross site area, in hectares (Example 4.4).

EXAMPLE 4.4 – Industrial Site Area Projection Population Growth Method

Use an average of the previous per capita gross floorspace figures as a basis for next ten year period. R = (5.2 + 5.4)/2 = 5.3m²/capita C = P x R = 9,698 x 5.3 = 51,399m² floorspace	GIVEN: Ten Year time Period for DCC Program Ten Year Population Increase = P Industrial Floorspace per Capita = R Ten Year Industrial Projection = I Assumptions: Industrial Gross Floor Area per Capita = 11.9 m²/capita Projected Ten Year Population Increase = 9,698 persons Average Site Coverage = 50%

DEVELOPMENT POTENTIAL METHOD

Some have argued that projecting commercial/industrial floorspace in relation to population growth is incomplete. In particular for urban regions, the demand for commercial and industrial developments may also be generated by customers from a neighbouring municipality, such as in the case of "big box" retailers.

The development potential method seeks to project the need for these types of land uses solely on the basis of development potential, without any linkage to a growth rate. Often this information exists in economic development reports or retail market needs assessment studies.

If these studies are unavailable, the total potential floorspace can be calculated for each of the commercial/industrial DCC categories by multiplying the floorspace ratios found in the Zoning Bylaw by the total areas designated for these land uses in the OCP. After deducting the amount built to date (as found in building permit records) from the total potential, the remaining floorspace results. Assuming that the remaining amount is to be achieved over the time period of the OCP, some proration can be made to determine the commercial and industrial projections for the purposes of DCC calculation. The adjustment may be made based on knowledge of local circumstances and good judgment.

In local governments where commercial/industrial development occurs predominantly in "greenfield" sites, the development potential can be obtained by simply totalling the amount of vacant commercial and industrial lands (Example 4.5).

EXAMPLE 4.5 – Commercial and Industrial Projections
Development Potential Method

C = A_c x (Time Period/OCP Buildout) x FSR = 18.35 x (10/25) x 0.7 = 5.138 ha = 51,380 m² floorspace I = A_i x (Time Period/OCP Buildout) = 57.7 x (10/25) = 23.08 ha	GIVEN: Total Vacant Commercial Land = Ac Total Vacant Industrial Land = A_i Ten Year Commercial Floorspace = C Ten Year Industrial Projection = I Assumptions: Commercial FSR = 0.7 A_c = 18.35 ha A_i = 57.7 ha Time Period (years) = 10 OCP Buildout (years) = 25

Projected Institutional Development

Establishment of institutional DCCs is difficult, for the reasons discussed in Chapter 2. Compounding the difficulty is the lack of predictability to institutional floorspace projections (e.g., private and public schools, hospitals, municipal buildings). Unlike commercial and industrial land uses which are based on the economic health of a community, institutional development is typically subject to various levels of government fiscal policy and tends to involve one or two large projects spread out over several years.

If DCCs are to be established for this land use, the best method of estimating institutional floorspace is to obtain the capital plans from major institutional developers. For example, the School and Health Boards may outline new facilities and additions in their capital project plans.

Alternatively, the two methods offered for the calculation of commercial/industrial floorspace can also be used to project institutional needs with some modifications. For the population growth method, a longer survey of building permit records is desirable, such as 20 or 25 years so that the effects of large, individual projects are averaged over the long term. For example, once a college has been built, another such facility might not be constructed for many years. The development potential approach could be used, if combined with good judgment and knowledge of local circumstances. The buildout of institutional floorspace would not likely be prorated in a linear fashion.

CHAPTER FIVE
Compiling a DCC Program

Chapter 5 – Compiling a DCC Program

To calculate DCCs, the proposed capital infrastructure program required to support new development must be identified. This chapter describes prerequisite policy decisions required and the sources of information needed to develop a DCC program. Some guidelines are suggested for estimating capital costs, and a format for presenting the summary DCC information is provided.

Prerequisite Policy Decisions

The development of a DCC program will depend in part, on how the policy issues described in Part I have been considered. Before a DCC program can be compiled, the following questions must be answered satisfactorily.

- How extensive will DCCs be applied, on a municipal-wide basis or area-specific basis?
- What time frame has been established for the DCC program (i.e. on a revolving or build-out basis)?
- What type of projects can be included in a DCC program?
- What project costs are DCC recoverable?

Source of Background Information

Sources of data and background documents which provide information to compile a DCC program include:

- Official Community Plan (OCP);
- Financial Plan;
- Master Transportation Plan;
- Master Drainage Plan (or Stormwater Management Plan);
- Master Sewerage Plan (or equivalent);
- Water Distribution Modeling Reports; and,
- Parks Master Plan.

On the basis of technical information contained in background reports together with suitable resolution of policy considerations, a DCC program can then be prepared.

Estimation of Capital Costs

As a DCC program is actually a subset of the Financial Plan, the purpose of this guide is not to describe how capital expenditures should be estimated. However, since the calculation of DCCs is directly tied to the costs of capital projects, some suggestions and guidelines are offered below regarding capital costs.

It is important that capital costs be properly estimated. As mentioned previously, DCCs are generally determined by dividing the net cost of capital expenditures attributable to new development by the amount and types of various land uses expressed in common "development units."

The *Local Government Act* stipulates that the resulting charges cannot be excessive in relation to the capital cost of prevailing standards of service (section 934 (4) (d) (i)). On the other hand, if capital costs are underestimated, the resulting charge will be understated. If collected funds are insufficient to cover the costs of required infrastructure construction, development may be delayed as a consequence. Therefore, cost estimates should be as accurate as possible to ensure that sufficient funds are collected to meet project costs, yet the estimates should not be excessive relative to actual costs.

The level of detail to which cost estimates should be completed will depend on the level of technical information that exists at the time of preparing the DCC bylaw. Often, only a planning level of engineering analysis is available, especially when projects are projected many years into the future. As the time of construction becomes closer, the cost estimates should be refined to reflect the progress made in the design process. Those familiar with Ministry of Transportation (MOT) policies will be aware of the five classes of cost estimates used by that Ministry, as described below.

1. Class E:
   - accuracy level 20% to 25%;
   - used to establish global budgets for feasibility and cost analyses;
   - based on various planning studies to identify needs, corridors, routes, etc.; and,
   - estimates made using average road costs per kilometre, lump sums for structures, etc.
2. Class D:
   - accuracy level 15% to 20%;
   - used to establish a preliminary cost estimate in an elemental format for cost planning purposes, for determining costs by engineering discipline for preliminary fee purposes and to establish a preliminary project control budget;
   - based on selected routes resulting from detailed route studies; and,
   - estimates made using average unit costs for summary level activities.
3. Class C:
   - accuracy level 15%;
   - used to confirm the control budget costs and to formulate tender packages;
   - based on preliminary design drawings and outline specifications; and,
   - estimates made using average unit costs for detailed activities.

4. Class B:
   - accuracy level 10%;
   - used to review and confirm the construction contract package costs;
   - based on completed functional design documentation; and,
   - estimates made using site-specific unit costs for detailed activity levels.
5. Class A:
   - accuracy level 7.5%;
   - used to produce final cost estimates for construction tenders;
   - based on an Engineer's final quantity estimates; and,
   - estimates made using site and market specific unit costs for contract pay items.

These classes of cost estimates could be adapted for use in estimating the capital costs of the DCC projects. For items planned for construction in a revolving window of five or ten years, cost estimates should be completed to a Class B or C level of accuracy, if possible. For longer term items in a build out program, cost estimates should be to a Class D or E level, as a minimum.

Given the *Local Government Act* definition of capital costs (section 932 (4)), the various costs of project components related to planning, engineering, and legal aspects need to be estimated, including:

- local government administration costs;
- local government overhead charges;
- engineering design services;
- engineering services during construction;
- materials testing allowance;
- allowance for underground hydro and telephone and/or for environmental mitigation; and,
- contingencies.

Right-of-way acquisition is another component of the capital cost that is recoverable through DCCs, and typical land costs can be obtained from local real estate agents, the BC Assessment Authority, or even independent land appraisers, if necessary. With respect to arterial roads, a right-of-way to a local standard might have been dedicated at time of subdivision. If no further subdivision along the frontage is anticipated, the additional right-of-way involved with upgrading to an arterial standard might have to be purchased by the municipality, and these costs should be included. In other cases, it can be assumed that the widening would be dedicated through the subdivision process without cost implications. For storm and sanitary sewer and watermains, these utilities are usually constructed within the road allowance. However, for sewers and mains constructed outside the

road allowance, right-of-way acquisition costs should be included as a capital cost for DCC calculation.

Capital costs may also include interest costs directly related to the works in exceptional circumstances where borrowing is required. The Inspector of Municipalities will consider allowing interest costs where it is necessary to construct specific infrastructure projects in advance of sufficient DCC cash flows in order to trigger investment in development. Example 5.2A shows how interest costs may be incorporated into the financial components of a DCC recoverable cost program.

Presentation of a DCC Program

To facilitate the calculation of DCCs during bylaw development, as well as monitoring and tracking of projects once the bylaw is in place, the DCC program should be compiled in a summary table. This table includes assigning a Project Reference Number to each capital project in the DCC program. For each capital project, a "Detail Sheet" should be appended to the supporting DCC documentation according to the Project Reference Number. The Detail Sheet is a standard form which itemizes all components of the cost estimate such as construction elements as well as planning, engineering, contingencies, etc.

Example 5.1 presents a suggested format for presenting the summary information for a list of all eligible projects for the community's DCC road program. Example 5.2 shows a typical Detail Sheet for one of these road DCC projects – "Road Project No. R001 - 16 Avenue." Example 5.2A is an addendum to Example 5.2, which calculates allowable interest for the DCC project.

EXAMPLE 5.1 – Suggested Format for DCC Program							
Road DCC Program							
Project No.	Location			Description	Cost Estimate	Year	Comment
	On	From	To				
R001	16 Ave.	Ironwood St.	Shoppers Row	Road reconstruction	$1,052,000	1998	Incl. R/W, 14m, C&G S/W
R002	88 Ave	212 St.	216 St.	Arterial Widening	$1,129,000	1998	Incl. Signals
R003	88 Ave.	202 St.		Signal	$97,000	1998	
R004	200 St.	26 Ave.		Bridge	$750,000	1999	As per traffic study
R005	Ospika Blvd.	Tyner Rd.	Hwy. 16	Arterial	$1,650,000	1999	Full arterial road
R006	S. Alder St.	Robron Rd.	Hilchey Rd.	Arterial	$8,559,000	1999	Full arterial road
R007	16 Ave.	248 St.	256 St.	Recap + Shoulders	$217,000	2000	
R008	16 Ave.	200 St.	208 St.	Major Collector	$2,632,000	2001+	Full urban standard
R009	30A Ave.	260 St.	264 St.	Top Lift	$53,000	2000	
R010	Austin Rd.	Poirier St.		Left Turn Bay	$280,000	1997	As per traffic study
R011	Clarke Rd.	Como Lake Rd.		Intersection Improve.	$800,000	1997	As per traffic study
R012	Mariner Way	Como Lake Rd.	Austin Rd.	Arterial Widening	$800,000	1997	Widening only
R013	1 St.	Arden Rd.	Willemar Ave.	Major Collector	$588,000	1997	Widening only
R014	10 St.	Willemar Ave.	McPhee Ave.	Top Lift	$192,000	2000	Incl. S/W
R015	Mission Rd.	Muir Rd.	Lerwick Rd.	Major Collector	$750,000	2000	Incl. R/W
R016	32 Ave.	256 St.	29 Ave.	ROW	$300,000	2001	R/W acquisition only
R017	88 Ave.	206 St.	207 St.	Median	$60,000	2001+	Incl. Landscaping
R018	62 Ave.	203 St.	204 St.	Half Road	$182,000	2001+	Incl. Road drains
			Total Road DDC Program		$20,091,000		

EXAMPLE 5.2 – Suggested Format for Detail Sheet

16 Avenue	**Project:** R001
From: Ironwood St.	**To:** Shoppers Row
Description: Reconstruct existing road to full 14m standard c/w curb & gutter and sidewalks both sides.	
Length: 750m	
Notes: – will require some ROW acquisition – will require utility pole relocation – does not include watermain	

No.	Item	Quantity	Unit	Unit Price	Total
1	ROW acquisition	1	LS	$20,000	$20,000
2	Common excavation & disp. (0.30m)	4,450	m^3	$6	$26,700
3	Pit run gravel (0.30m)	4,450	m^3	$16	$71,200
4	20mm gravel (0.13m)	1,480	m^3	$32	$47,360
5	300 mm dia. storm sewer	210	m	$118	$24,780
6	1,050 mm dia. storm manholes	2	ea	$1,800	$3,600
7	Curb & gutter	1,500	m	$54	$81,000
8	Sidewalk (1.8m)	2,420	m	$40	$96,800
9	Asphalt (0.075m)	2,150	m^3	$56	$120,400
10	Boulevard restoration	1,500	m	$23	$34,500
11	Street lighting	22	ea	$3,500	$77,000
12	Relocate utility poles	3	ea	$2,000	$6,000
13	Signs and markings	750	ea	$5	$3,750
	Subtotal				**$613,090**
14	Engineering design				$42,916
15	Engineering field services				$30,655
16	Materials testing allowance				$3,065
17	City staff costs				$12,262
18	City overhead				$24,524
19	Hydro, tel. & envir. Allowance				$12,262
20	Contingencies				$61,309
	Total				**$800,082**

EXAMPLE 5.2A

Determination of Additional Interest Costs			
A	Total Costs from Example 5.2		800,082
B	Less amount funded by gifts, grants or other external contributions		-
C=A-B	Net amount Eligible for Interest Application		800,082
D	Percentage of debt to which interest will be applied	75%	
E=Cx(1-D)	Portion of Net amount that interest will **not** be applied to		200,021
F=CxD	Portion of Net amount that interest will be applied to		600,062
	Term of the Debt in Years (cannot exceed the DCC term)	10	
	Current MFA rate	7.00%	
G	Interest Rate Multiplier from Table 5.1	1.42	
H=FxG	Debt Financed Portion of the Project		852,087
I=B+E	Non Debt Financed Portion of the Project		200,021
J=H+I	Total Cost of the Project with Debt Financing Costs		1,052,108

Please note that interest is for exceptional circumstances only. Prior to Inspector's approval, the local government must provide extensive information including the following:

- a council/board resolution authorizing the use of interest;
- confirmation that the interest applied does not exceed the MFA rate **or** if borrowing has already been undertaken, the actual rate providing it does not exceed the MFA rate;
- confirmation that the amortization period does not exceed the DCC program time frame;
- evidence that the current DCC reserve fund balance is insufficient for the work in question;
- demonstration that the project is an exceptional circumstance (fixed capacity, out-of-sequence, or Greenfield); and,
- evidence of public consultation and disclosure in the financial plan and DCC report.

Table 5.1 calculates the total additional cost of debt servicing from a serial loan with payments at the end of each term (Based on a present value calculation). To Calculate the total debt servicing costs (interest and principal) simply multiply the initial principal of the debt by the multiplier E.G. the multiplier for a 10 year loan at 7% is 1.42. The total interest and principal payments on a $1 million loan would equal $1.42 million.

TABLE 5.1 – Length of the Debit in Years

Interest Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
3.50%	1.04	1.05	1.07	1.09	1.11	1.13	1.14	1.16	1.18	1.20	1.22	1.24	1.26	1.28	1.30	1.32	1.34	1.36	1.39	1.41
4.00%	1.04	1.06	1.08	1.10	1.12	1.14	1.17	1.19	1.21	1.23	1.26	1.28	1.30	1.33	1.35	1.37	1.40	1.42	1.45	1.47
4.25%	1.04	1.06	1.09	1.11	1.13	1.15	1.18	1.20	1.22	1.25	1.27	1.30	1.32	1.35	1.37	1.40	1.42	1.45	1.48	1.50
4.50%	1.05	1.07	1.09	1.11	1.14	1.16	1.19	1.21	1.24	1.26	1.29	1.32	1.34	1.37	1.40	1.42	1.45	1.48	1.51	1.54
4.75%	1.05	1.07	1.10	1.12	1.15	1.17	1.20	1.23	1.25	1.28	1.31	1.33	1.36	1.39	1.42	1.45	1.48	1.51	1.54	1.57
5.00%	1.05	1.08	1.10	1.13	1.15	1.18	1.21	1.24	1.27	1.30	1.32	1.35	1.38	1.41	1.45	1.48	1.51	1.54	1.57	1.60
5.25%	1.05	1.08	1.11	1.13	1.16	1.19	1.22	1.25	1.28	1.31	1.34	1.37	1.40	1.44	1.47	1.50	1.54	1.57	1.60	1.64
5.50%	1.06	1.08	1.11	1.14	1.17	1.20	1.23	1.26	1.29	1.33	1.36	1.39	1.43	1.46	1.49	1.53	1.56	1.60	1.64	1.67
5.75%	1.06	1.09	1.12	1.15	1.18	1.21	1.24	1.28	1.31	1.34	1.38	1.41	1.45	1.48	1.52	1.56	1.59	1.63	1.67	1.71
6.00%	1.06	1.09	1.12	1.15	1.19	1.22	1.25	1.29	1.32	1.36	1.39	1.43	1.47	1.51	1.54	1.58	1.62	1.66	1.70	1.74
6.25%	1.06	1.09	1.13	1.16	1.20	1.23	1.27	1.30	1.34	1.37	1.41	1.45	1.49	1.53	1.57	1.61	1.65	1.69	1.74	1.78
6.50%	1.07	1.10	1.13	1.17	1.20	1.24	1.28	1.31	1.35	1.39	1.43	1.47	1.51	1.55	1.60	1.64	1.68	1.73	1.77	1.82
6.75%	1.07	1.10	1.14	1.17	1.21	1.25	1.29	1.33	1.37	1.41	1.45	1.49	1.53	1.58	1.62	1.67	1.71	1.76	1.80	1.85
7.00%	1.07	1.11	1.14	1.18	1.22	1.26	1.30	1.34	1.38	1.42	1.47	1.51	1.56	1.60	1.65	1.69	1.74	1.79	1.84	1.89
7.25%	1.07	1.11	1.15	1.19	1.23	1.27	1.31	1.35	1.40	1.44	1.49	1.53	1.58	1.62	1.67	1.72	1.77	1.82	1.87	1.92
7.50%	1.08	1.11	1.15	1.19	1.24	1.28	1.32	1.37	1.41	1.46	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.91	1.96
7.75%	1.08	1.12	1.16	1.20	1.24	1.29	1.33	1.38	1.43	1.47	1.52	1.57	1.62	1.67	1.73	1.78	1.83	1.89	1.94	2.00
8.00%	1.08	1.12	1.16	1.21	1.25	1.30	1.34	1.39	1.44	1.49	1.54	1.59	1.64	1.70	1.75	1.81	1.86	1.92	1.98	2.04
8.25%	1.08	1.13	1.17	1.21	1.26	1.31	1.36	1.41	1.46	1.51	1.56	1.61	1.67	1.72	1.78	1.84	1.89	1.95	2.01	2.08

TABLE 5.1 – Length of the Debit in Years (continued)																				
Interest Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
8.50%	1.09	1.13	1.17	1.22	1.27	1.32	1.37	1.42	1.47	1.52	1.58	1.63	1.69	1.75	1.81	1.87	1.93	1.99	2.05	2.11
8.75%	1.09	1.13	1.18	1.23	1.28	1.33	1.38	1.43	1.49	1.54	1.60	1.65	1.71	1.77	1.83	1.90	1.96	2.02	2.09	2.15
9.00%	1.09	1.14	1.19	1.23	1.29	1.34	1.39	1.45	1.50	1.56	1.62	1.68	1.74	1.80	1.86	1.92	1.99	2.06	2.12	2.19
9.25%	1.09	1.14	1.19	1.24	1.29	1.35	1.40	1.46	1.52	1.58	1.64	1.70	1.76	1.82	1.89	1.95	2.02	2.09	2.16	2.23
9.50%	1.10	1.14	1.20	1.25	1.30	1.36	1.41	1.47	1.53	1.59	1.65	1.72	1.78	1.85	1.92	1.98	2.05	2.12	2.20	2.27
9.75%	1.10	1.15	1.20	1.26	1.31	1.37	1.43	1.49	1.55	1.61	1.67	1.74	1.81	1.87	1.94	2.01	2.09	2.16	2.23	2.31
10.00%	1.10	1.15	1.21	1.26	1.32	1.38	1.44	1.50	1.56	1.63	1.69	1.76	1.83	1.90	1.97	2.05	2.12	2.19	2.27	2.35
10.25%	1.10	1.16	1.21	1.27	1.33	1.39	1.45	1.51	1.58	1.64	1.71	1.78	1.85	1.93	2.00	2.08	2.15	2.23	2.31	2.39
10.50%	1.11	1.16	1.22	1.28	1.34	1.40	1.46	1.53	1.59	1.66	1.73	1.80	1.88	1.95	2.03	2.11	2.19	2.27	2.35	2.43
10.75%	1.11	1.16	1.22	1.28	1.34	1.41	1.47	1.54	1.61	1.68	1.75	1.83	1.90	1.98	2.06	2.14	2.22	2.30	2.39	2.47
11.00%	1.11	1.17	1.23	1.29	1.35	1.42	1.49	1.55	1.63	1.70	1.77	1.85	1.93	2.01	2.09	2.17	2.25	2.34	2.42	2.51
11.25%	1.11	1.17	1.23	1.30	1.36	1.43	1.50	1.57	1.64	1.72	1.79	1.87	1.95	2.03	2.11	2.20	2.29	2.37	2.46	2.55
11.50%	1.12	1.18	1.24	1.30	1.37	1.44	1.51	1.58	1.66	1.73	1.81	1.89	1.97	2.06	2.14	2.23	2.32	2.41	2.50	2.59
11.75%	1.12	1.18	1.24	1.31	1.38	1.45	1.52	1.60	1.67	1.75	1.83	1.91	2.00	2.09	2.17	2.26	2.35	2.45	2.54	2.64
12.00%	1.12	1.18	1.25	1.32	1.39	1.46	1.53	1.61	1.69	1.77	1.85	1.94	2.02	2.11	2.20	2.29	2.39	2.48	2.58	2.68

CHAPTER SIX

Determining the Net DCC Recoverable Amount

Chapter 6 – Determining the Net DCC Recoverable Amount

Once the projection of new development has been estimated, and a program of infrastructure projects required to support that new development has been compiled into a DCC program, the net amount to be paid by DCCs must be determined. The net DCC recoverable amount should not be confused with DCC recoverable cost components. While the latter pertains to the various aspects of a capital project that can be included as a capital cost for the purpose of DCC calculations (e.g., construction, planning, engineering, legal, etc.), the former is the net figure that is divided by the amount of new development to obtain the DCC rate. This chapter describes a number of considerations that should be taken into account to arrive at the net DCC recoverable amount: deducting grants and other funding sources, allocating the benefit to new development, applying the municipal assist factor, and deducting any existing DCC reserve monies.

Deducting Grants

The DCC recoverable portion of capital expenditures should be net costs attributable to new development. In other words, if funding contributions from other sources are associated with a capital project, these monies should be taken into account. Policies and legislation regarding grants change over time and grant programs can be over-subscribed, therefore, contributions from grant programs cannot be assured. Even if projects qualify, best practice suggests grant monies not be included until they are approved. If a grant is subsequently approved, the DCC bylaw should be amended accordingly.

Allocating Benefit

Similar to the issue of the municipal assist factor, no direct reference is provided in the *Local Government Act* which formally recognizes apportionment of benefit. Section 933 (2) states only that DCCs imposed by a local government for the construction of infrastructure must service new development either directly or indirectly. However, the guiding principle of fairness and equitable distribution of capital costs amongst those parties receiving benefit, suggests that certain DCC projects may benefit the population at large.

For example, existing users may receive some benefit from the construction of infrastructure, if the facilities are upgraded in response to pent up demand as well as new development. In this case, the capital costs (or some portion of them) should be shared by the entire community. Thus the allocation of capital costs that benefit existing users (versus capital costs attributable to new development) should be deducted from the difference between the total capital cost estimate and funds from other sources.

Benefit apportionment should also reflect the fact that not all growth translates to new development units. Just as this effect may be taken into account when making new development projections, it may also be incorporated into the consideration of benefit allocation.

ROADS

It is acknowledged that a good transportation network is beneficial to the entire community. In response, capital costs related to the road DCC program should be apportioned to existing users as well as to new development. Some apportionment is especially appropriate when a municipal-wide approach has been adopted in the calculation of road DCCs.

Generally, those aspects of the road DCC program which involve replacing existing components, such as road rehabilitation projects have a higher benefit to existing users than capital projects that provide increased capacity, such as new roads, additional lanes, new traffic control devices, and left turn bays. The existing and improved Levels of Service (LOS) should be considered. While it can be argued that new development does not cause all the new traffic demands (existing users may be travelling more), there is a link between new development and the need for additional road facilities.

STORM DRAINAGE, SANITARY, AND WATER

For storm drainage, sanitary, and water, new infrastructure systems or extensions into previously unserviced areas clearly have little benefit to existing users. However, for infrastructure components that are well integrated into existing systems, such as an interconnected watermain, allocating benefit may be more difficult. If existing residents are inadequately served by existing utilities, existing users may receive benefit in the form of improved service and should share in the capital costs.

SUGGESTIONS FOR APPORTIONMENT

It is acknowledged that the allocation of benefit may be difficult to quantify, especially if projects are being proposed for construction in ten or twenty years. Although an element of subjectivity will always exist, the rationale for apportionment of capital costs in the DCC bylaw should include supporting documentation, technically based where possible.

Two approaches to allocating benefit are suggested below: a general "rule of thumb" approach, and a method based on some technical means. Either approach could be applied on a project by project basis or on the total value of the DCC program, depending on the types and nature of the capital improvements.

One way is to use the following "rule of thumb." If construction of the proposed works would not proceed at all if there was no new development, then it would be fair to say that none of the costs

should be paid by existing users. In other words, 100% of the costs would be attributable to new development and eligible for DCC recovery. In some cases, the marginal costs associated with "oversizing" may be assessed in this manner.

If it is evident that the existing public gains at least some benefit from new capital works and infrastructure improvements and that some benefit will be received by a component of growth that will not be reflected in new development units (and thus will not be subject to DCCs), then equitable assessment of that benefit is dependent upon selection of a suitable means for apportionment. For example, in the case of an arterial road, the capital costs could be apportioned according to traffic capacity, while for trunk sewers, costs could be split according to flow. Service population could also be a way of allocating benefit. If only a planning level of engineering analysis is available at the time of bylaw development, general ranges of benefit could be assigned based on technical data accompanied by good engineering judgement.

The following examples show the various means to apportion benefit and illustrate the subjectivity involved in justifying that apportionment.

Example 6.1 Allocating Benefit – Case 1A	
Using the "rule of thumb" rationale, project would not proceed if it was not for new development needs. Therefore, benefits to new development = 100%	GIVEN: Bridge project Assumptions • two lanes presently offer LOS "B" • proposed to be upgraded to four lanes to access greenfield site.

Example 6.2 Allocating Benefit – Case 1B	
Benefit can be apportioned according to the following rationale. The argument is that the bridge needs to be replaced anyway. 2 lanes existing = 50% benefit to existing users 4 lanes ultimate Therefore, benefit to new development = (100% - 50%) = 50%	GIVEN: Bridge project Assumptions: • two lanes presently offer LOS "B" • bridge currently at end of service life • proposed to be upgraded to four lanes to access greenfield site.

Example 6.3 Allocating Benefit – Case 1C	
Bridge is inadequate to service present needs. Upgrade to four lanes will improve LOS as well as accommodate new development. Rationale for apportionment as follows: 3 lanes needed to adequately service existing 1 lane to accommodate new development Therefore, benefits to new development = 25%	GIVEN: Bridge project Assumptions: • two lanes presently offer LOS "D" • bridge currently at end of service life • new development expected to add 1/3 more traffic.

Example 6.4 Allocating Benefit – Case 2	
700 vehicles = 35% benefit to existing users 2,000 vehicles Therefore, benefits to new development = (100% - 35%) = 65%	GIVEN: Arterial Road Construction Assumptions: Total Estimated Current Peak Hour Traffic = 700 vehicles (e/w) Total Estimated Peak Hour Capacity of Future Road System = 2,000 vehicles (e/w)

Example 6.5 Allocating Benefit – Case 3A	
Using "rule of thumb" rationale, project would not proceed if it was not for new development needs. Therefore, benefit to new development = 100% and full cost for 300mm diameter sewer project are DCC recoverable.	GIVEN: Sanitary Sewer Project Assumptions: • 250mm diameter pipe presently 50% full • 300mm diameter pipe required for new development

Example 6.6 Allocating Benefit – Case 3B	
Allocating benefit according to the following rationale. The argument is that the sewer needs to be replaced anyway. Only apportion marginal cost between installation of 250mm diameter and 300mm diameter pipe to new development. Therefore, benefits to new development = $10,000/ $60,000 = 17%	GIVEN: Sanitary Sewer Project Assumptions: • 250mm diameter pipe presently leaking • Replace with 300mm diameter pipe required for new development • 250mm diameter pipe replacement to cost $50,000 • 300mm diameter pipe replacement to cost $60,000

Applying the Municipal Assist Factor

The municipal assist factor is another deduction which should be made in determining the net DCC recoverable amount. As discussed in Chapter 2, this factor is separate from any allocation of capital costs based on benefit.

As noted in Part 1, different infrastructure categories could have different municipal assist factors. For example, a road DCC could have an assist factor of 10%, while for sanitary DCCs, the assist factor could be 5%. However, all land uses within a particular category must have the same assist factor applied. For example, a 10% assist for residential and a 25% assist for commercial developments could not be provided.

The municipal assist factor should be applied to the portion of costs apportioned to new development. In other words, from the total capital costs, applicable funds from other sources should first be deducted. From the resulting amount, the benefit factor should be applied. Then, the assist factor should be calculated on the remaining amount.

Calculating the Net Recoverable Cost of the DCC Program

The net recoverable cost of the DCC program is determined by allowing for the following considerations:

- identification of government grants and other funding contributions;
- determination of the portion of costs applicable to new development; and,
- application of the municipal assist factor.

Compilation of the DCC recoverable amount for each project produces the net recoverable cost of the DCC program. Example 6.8 shows a suggested format for summarizing these various financial components of the DCC program. The columns identified in the table are explained as follows.

Column Explanation

(1) Total Capital Cost Estimate

(2) Grants and Funds from Other Sources

(3) Benefit Factor for New Development

(4) Benefit to New Development:
[(1)-(2)] x (3)

(5) Municipal Assist Factor Amount:
(4) x Assist %

(6) DCC Recoverable Amount: (4) - (5)

(7) Total Municipal Responsibility:
[(1) - (4)] + (5)

Deducting Existing DCC Reserves

If the proposed bylaw is an update of an existing DCC bylaw, some capital projects may be carried over to the updated DCC program, if they were not previously constructed. In this case, any monies in the existing DCC reserve account not yet expended should likewise be carried over into the new bylaw. Therefore, these funds should be applied to offset the net DCC program recoverable amount.

Calculating the Net DCC Recoverable Amount

The net DCC recoverable amount is obtained by deducting any existing DCC reserve monies from the net recoverable cost of the DCC program.

EXAMPLE 6.8 – Suggested Format for Recoverable DCC Program Costs

Road DCC Program Recoverable Costs

Project No.	Column			(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Location			Cost Estimate	Other Funding Sources	Benefit Factor (%)	Benefit to New Dev.	Municipal Assist Factor (1%)	DCC Recoverable	Total Municipal Responsibility
	On	From	To							
R001	16 Ave.	Ironwood St.	Shoppers Row	$1,052,000		49	$520,000	$5,200	$514,800	$537,200
R002	88 Ave.	212 St.	216 St.	$1,129,000		100	$1,129,000	$11,290	$1,117,710	$11,290
R003	88 Ave.	202 St.		$97,000		65	$63,050	$631	$62,419	$34,581
R004	200 St.	26 Ave.		$750,000		50	$375,000	$3,750	$371,250	$378,750
R005	Ospika Blvd.	Tyner Rd.	Hwy. 16	$1,650,000		65	$1,072,500	$10,725	$1,061,775	$588,225
R006	S. Alder St.	Robron Rd.	Hilchey Rd.	$8,559,000	$4,279,500	100	$4,279,500	$42,795	$4,236,705	$42,795
R007	16 Ave.	248 St.	256 St.	$217,000		65	$141,050	$1,411	$139,639	$77,361
R008	16 Ave.	200 St.	208 St.	$2,632,000		100	$2,632,000	$26,320	$2,605,680	$26,320
R009	30A Ave.	260 St.	264 St.	$53,000		65	$34,450	$345	$34,105	$18,895
R010	Austin Rd.	Poirier St.		$280,000		65	$182,000	$1,820	$180,180	$99,820
R011	Clarke Rd.	Como Lake Rd.		$800,000		65	$520,000	$5,200	$514,800	$285,200
R012	Mariner Way	Como Lake Rd.	Austin Rd.	$800,000		100	$800,000	$8,000	$792,000	$8,000
R013	1 St.	Arden Rd.	Willemar Ave.	$588,000		100	$588,000	$5,880	$582,120	$5,880
R014	10 St.	Willemar Ave.	McPhee Ave.	$192,000		65	$124,800	$1,248	$123,552	$68,448
R015	Mission Rd.	Muir Rd.	Lerwick Rd.	$750,000		65	$487,500	$4,875	$482,625	$267,375
R016	32 Ave.	256 St.	29 Ave.	$300,000		100	$300,000	$3,000	$297,000	$3,000
R017	88 Ave.	206 St.	207 St.	$60,000		65	$39,000	$390	$38,610	$21,390
R018	62 Ave.	203 St.	204 St.	$182,000		65	$118,300	$1,183	$117,117	$64,883
			Totals	$20,091,000	$4,279,500		$13,406,150	$134,063	$13,272,087	$2,539,413

Example 6.9 below shows the deduction of existing DCC reserve monies.

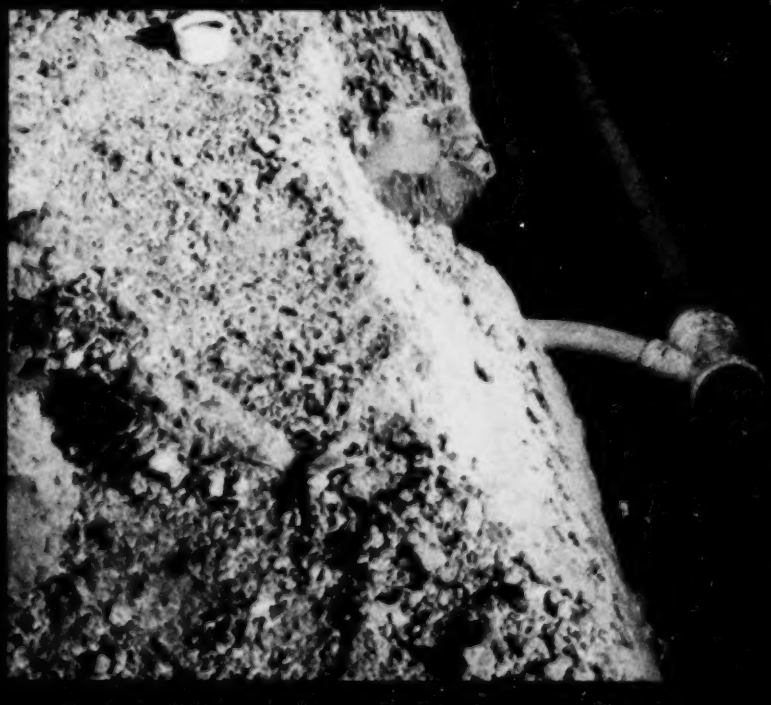
If no DCC bylaw has ever been adopted in the municipality (i.e., there are no existing DCC reserves), the net amount to be paid by DCCs is simply the net DCC program recoverable cost.

In summary, the following deductions should be made to the total capital costs to arrive at the net DCC recoverable amount:

- government grants and other funding contributions;
- the portion of costs not attributable to new development;
- the amount representing the municipal assist factor contribution; and,
- any existing DCC reserve monies.

EXAMPLE 6.9 Net DCC Recoverable Calculation	
Net DCC Recoverable Amount = Net Recoverable DCC Program Cost – Existing DCC Reserve Account Monies $13,216,102 - $293,500 = $12,922,602	GIVEN: Net DCC program recoverable (1997-2006) = $13,216,102 Existing DCC Reserve Account (as at Dec. 31, 1996) = $293,500

CHAPTER SEVEN
Calculating DCCs



Chapter 7 – Calculating DCCs

The technical procedure for calculating DCCs includes estimating new development (Chapter 4), compiling a DCC program (Chapter 5), and determining the net DCC recoverable amount (Chapter 6). This chapter discusses the last step to determining the charges: comparing the impact of different types of land use on each category of infrastructure in relation to the amount of new development. On the basis of the DCC inputs established in earlier chapters, various DCC calculation methodologies for roads, storm drainage, sanitary, water, and parkland are outlined in the following sections.

Approaches to DCC Calculation Methodology

The legislative basis for the various approaches to DCC calculation methodology is contained in the *Local Government Act*. Section 934 specifies that DCCs may be determined for different zones, uses, numbers of lots or units in a development, sizes, or capital costs as they relate to different classes of development. Therefore, some means for comparing the impact of different types of land use on each municipal service should be established. In general, for residential and institutional land use, the amount of new development is related to the population being served, such as residents, patients, or students. For commercial and industrial land uses, quantifying new development depends on the product and process involved, and the impact can vary significantly from building to building. However, unless the exact types of specific development are known in advance, the approach to the DCC calculation methodology has been to use broad averages for estimating impact. The disadvantage of broad averages is that industries such as water bottling and food processing operations may greatly exceed average demand/generation for water and sewer, so the figures should be applied cautiously. Regardless of the type of development, impact should be based on statistically significant information such as traffic generated, impervious surfaces, consumption, or flow. DCCs are not levies imposed on the basis of the ability to pay, property assessment values, retail sales, or the size of a company.

Road DCCs

For road charges, the net DCC recoverable amount can be distributed amongst new development in proportion to the traffic volume generated by the respective land uses using the road facilities.

Widely accepted by many local governments, the comparison of traffic generation rates for various land uses may be based on the Institute of Transportation Engineers (ITE) manual titled, *Trip Generation* (ITE, 1991). Trip rates are commonly measured in units known as "trip ends." ITE defines a "trip end" to mean a single or one-directional vehicle movement (i.e., either exiting or entering) a particular site. Although the ITE manual measures the trip rates for various conditions, the average trip rate for the afternoon

(i.e., p.m.) peak hour of the generator is suggested as the common basis for comparing road impact for DCC calculation purposes. This is because road capacity is related to peak hour needs, rather than average traffic, and greater amounts of traffic are experienced during afternoons, as opposed to mornings.

More than 100 land use codes are classified by ITE in their manual. Further, the trip rates are expressed in various units including persons, dwelling units, gross floor area, and gross site area. Therefore, selection of the code that best corresponds to the DCC categories in the appropriate units for which the charges are being determined must be made. If a density gradient is the basis for how residential land uses will be charged, typical building forms that best correspond to the gross density ranges should be carefully chosen. Discretion should also be used when selecting codes for non-residential land uses. For example, the trip generation manual includes a variety of commercial uses with a wide range of trip rates such as "General Office Building" (Code 710), "Shopping Centre less than 10,000 square feet" (Code 820), and "Business Park" (Code 770). Sometimes, the distinction between codes is not clear, such as between "General Heavy Industrial" (Code 120) and "Manufacturing" (Code 140). And in other instances, very little information exists, such as institutional land uses. The rationale for selecting a particular trip rate to represent a certain DCC land use category should be documented.

The ITE manual does not provide information on the amount of truck traffic, as compared to passenger vehicles. However, trucks have a greater impact on roads than passenger vehicles, in terms of capacity, durability, and construction of roads. Some estimate of truck traffic in relation to the various land uses may be available in engineering documents, and the effect of trucks can be factored into traffic impact considerations. In some municipalities, one truck is estimated to be equivalent to three passenger vehicles.

Traffic generation can also be impacted by another effect known as "pass-by" trips. These trips are those made as intermediate stops on the way from an origin to a primary trip destination and apply especially to commercial developments. Although the ability to quantify pass-by trips may be complicated, the ITE manual suggests an estimate of 25% of all traffic volumes are trips of this type.

A weighted trip rate can be developed to take into account truck traffic and pass-by trips, as shown in Example 7.1.

Using the respective weighted trip rate for DCC categories, the total trip ends from all land uses projected from new development for either a fixed time period or to build out can be determined. Dividing the net amount to be paid by DCCs by the total trip ends results in a unit DCC per trip end. Multiplying the DCC per trip end by the trip rate for the respective land use yields a schedule of road DCCs. A sample calculation is provided in Example 7.2.

EXAMPLE 7.1 Weighted Trip Generation Rates

R_C = (1.48/1000)/0.3048²
= 0.016 AVTE per m²

R_T = F x R_C
= 3 x 0.016 = 0.048 AVTE per m²

R_W = (1 – P) x [R_C x (1 – T)] + (R_T x T)
= (1 – 0.25) x 0.016 x (1 – 0.05) + (0.048 x 0.05)
= 0.014 AVTE per m² gross floor area

GIVEN:
Commercial Trip Rate (AVTE, pm Pk Hr for car) = R_C
Commercial Trip Rate (AVTE, pm Pk Hr for truck) = R_T
Weighted Commercial Trip Rate (AVTE, pm Pk Hr) = R_W
Pass-by Trips (%) = P
Truck Traffic (%) = T
Truck Impact Factor = F

ASSUMPTIONS:
Business Park (Code 770) = 1.48 AVTE per 1000 ft², pm Pk Hr for car
0.3048 = conversion from imperial (feet) to metric (meters)
P = 25%
T = 5%
F = 3

EXAMPLE 7.2 – Road DCC Calculation			
A: Traffic Generation Calculation			
Land Use	**Col. (1) Estimated New Development**	**Col. (2) Wt. Trip Rate (AVTE, pm Pk Hr per unit)**	**Col. (3) = (1) x (2) Total Trip Ends**
Low Density Residential	1,985 dwelling units	1.02	2,025
Medium Density Residential	827 dwelling units	0.66	546
High Density Residential (1)	331 dwelling units	0.62	205
High Density Residential (2)	165 dwelling units	0.40	66
Commercial	51,380 m^2 gross floor area	0.014	706
Industrial	23.08 ha gross site area	27.75	641
Institutional	50,000 m^2 gross floor area	0.018	901
		Total Trip Ends	**5,089(a)**
B: Unit Road DCC Calculations			
Net Road DCC Program Recoverable	$13,272,089		(b)
Existing Road DCC Reserve Monies	$(293,500)		(c)
Net Amount to be Paid by DCCs	$12,978,588		(d) = (b) – (c)
DCC per Trip End	$2,550.42		(e) = (d) / (a)
C: Resulting Road DCCs			
Low Density Residential	$2,601 per dwelling units		(e) x Col. (2)
Medium Density Residential	$1,683 per dwelling units		(e) x Col. (2)
High Density Residential (1)	$1,581 per dwelling units		(e) x Col. (2)
High Density Residential (2)	$1,020 per dwelling units		(e) x Col. (2)
Commercial	$35.04 per m^2 gross floor area		(e) x Col. (2)
Industrial	$70,784 per ha gross site area		(e) x Col. (2)
Institutional	$45.93 per m^2 gross floor area		(e) x Col. (2)

Storm Drainage DCCs

The need for storm drainage works is directly related to the potential runoff generated by developments in different land use zones (and not population). Therefore, storm drainage DCCs should be based on the relative runoff potential for various land uses. The most significant factor that influences the amount of runoff produced is the imperviousness of the development site, and for all intents and purposes, the runoff coefficient is equal to the percentage of impervious area. Urban development increases the amount of impervious areas as a result of the construction of roads, driveways, parking lots, and rooftops. The more impervious surfaces in a watershed, the greater the increase in runoff peak and volume, in comparison to pre-development conditions. Drainage improvements are demanded in response to these impacts.

To determine the relative runoff potential between residential, commercial, industrial, and institutional categories, the total area accommodated by each land use should be calculated from the new development projections and respective gross unit densities. The minimum lot sizes and floorspace ratios are often found in background documents such as the Zoning Bylaw or other planning reports

Typically, 20% of a parcel's gross area is used for road and servicing rights-of-ways. As an example, average gross densities can be assumed for the residential DCC categories as shown in Table 7.1.

TABLE 7.1 – Average Gross Density For Residential DCC Categories

DCC Categories	Gross Unit Density
Low Density Residential	10 units per gross ha
Medium Density Residential	30 units per gross ha
High Density Residential (1)	60 units per gross ha
High Density Residential (2)	75 units per gross ha

Values for the runoff coefficient for various land uses may be found in engineering documents such as the Subdivision Control Bylaw or Engineering Design Criteria Manual. An example of typical runoff coefficients for various land uses is shown in Table 7.2.

TABLE 7.2 – Typical Runoff Coefficients for Various Land Uses	
Land Use	**Typical Runoff Coefficients**
Low Density Residential	0.40 (i.e., 40% of the site is impervious)
Medium Density Residential	0.65 (i.e., 65% of the site is impervious)
High Density Residential (1)	0.80 (i.e., 80% of the site is impervious)
High Density Residential (2)	0.80 (i.e., 80% of the site is impervious)
Commercial	0.90 (i.e., 90% of the site is impervious)
Industrial	0.90 (i.e., 90% of the site is impervious)
Institutional	0.85 (i.e., 85% of the site is impervious)

Using the runoff coefficients, the total amount of impervious surface area for each land use can be calculated. The total impervious area may be related to low density residential land use through the concept of "equivalent drainage units" (EDU's). An EDU is the amount of impervious area of a low-density residential unit.

For example, at a density of 10 units per hectare with a runoff coefficient of 0.40, one unit has an impervious area of 400 m^2. In comparison, medium density residential at density of 30 units per hectare with a runoff coefficient of 0.65 has an impervious area of 217 m^2. Thus in terms of imperviousness, one unit of medium density residential is equivalent to 217/400 or 0.54 of a low-density residential unit. This ratio is known as the "equivalence factor." In this manner, the total equivalent drainage units can be determined.

Dividing the net amount to be paid by DCCs by the total equivalent drainage units results in a DCC per EDU. The storm drainage DCC for each land use is calculated by multiplying the DCC per EDU by the equivalence factor. A sample calculation is provided in Example 7.3.

Sanitary DCCs

Sanitary DCCs are based on the premise that expansion and upgrading of sewerage facilities are demanded by population growth. For residential land use, typical occupancy rates were discussed in Chapter 4 on projected residential development. The impact on the sanitary sewer system from non-residential land uses is commonly expressed as a population density or as an area based demand. For example, a typical range of equivalent density is 62 to 93 m^2 per person (1 to 1.5 persons per 1,000 $ft.^2$ gross floor area) for commercial and institutional land. An area based demand can be converted to an equivalent population demand. For example, a typical commercial or industrial flow is 22,500 L/day/ha of gross site area, while the typical average per capita flow is 350 L/day. Thus the equivalent population can be calculated, as shown in Example 7.4 below.

Based on the average population densities for the various land uses, the total equivalent service population can be calculated. Dividing the net amount to be paid by DCCs by the total equivalent service population results in a DCC per capita. The sanitary DCC for each land use is then established by multiplying the DCC per capita by the average population densities for the respective development units. An example of the sanitary DCC calculation is provided in Example 7.5 and Example 7.5A.

EXAMPLE 7.4 Equivalent population of Non-Residential Land Uses for Sanitary Impact

PEQ	=	QN/QR	GIVEN: Average generation (L/day/ha gross site area) = QN Average per capita flow (L/day/capita) = QR Equivalent Population = PEQ
	=	22,500 L/day/ha 350/L/day	
	=	64.3 pers/ha	Assumptions: QN = 22,500 L/day/ha QR = 350/day/ha

EXAMPLE 7.3 – Storm Drainage DCC Calculation

A: Drainage Impact Calculation

	Col. (1)	Col. (2)	Col. (3)	Col. (4) = [(1) / (2)] x (3)	Col. (5)	Col. (6)	Col. (7) = (5) x (6)
Land use	**Unit of Development**	**Density/FSR/Site Coverage**	**Runoff Coefficient**	**Impervious Area per Unit of Development (m^2)**	**Equivalence Factor**	**Estimated New Development**	**Equivalent Drainage Units**
Low Density Residential	1 dwelling unit	10 lots per gross ha	0.40	400 (a)	1.00 (a) / (a)	1.985	1.985
Medium Density Residential	1 dwelling unit	30 units per gross ha	0.65	217 (b)	0.54 (b) / (a)	827	448
High Density Residential (1)	1 dwelling unit	60 units per gross ha	0.80	133 (c)	0.33 (c) / (a)	331	110
High Density Residential (2)	1 dwelling unit	75 units per gross ha	0.80	107 (d)	0.27 (d) / (a)	165	44
Commercial	1 m^2 gross floor area	70% site coverage	0.90	1.3 (e)	0.0032 (e) / (a)	51.380	165
Industrial	1 ha gross site area		0.90	9,000 (f)	22.5 (f) / (a)	23.08	519
Institutional	1 m^2 gross floor area	70% site coverage	0.85	1.2 (g)	0.0030 (g) / (a)	50,000	152
						Total EDU's	**3,424 (h)**

B: Unit DCC Calculation

Net Storm Drainage DCC Program Recoverable	$4,986,383		(i)			
Existing Storm Drainage DCC Reserve Monies	$(201,108)		(j)			
Net Amount to be Paid by DCCs	$4,785,275		(k) = (i) – (j)			
DCC per Equivalent Drainage Unit	$1,397.76		(l) = (k) / (h)			

C: Resulting Storm Drainage DCCs

Low Density Residential	$1,398	per dwelling unit	(l) x Col. (5)			
Medium Density Residential	$757	per dwelling unit	(l) x Col. (5)			
High Density Residential (1)	$466	per dwelling unit	(l) x Col. (5)			
High Density Residential (2)	$373	per dwelling unit	(l) x Col. (5)			
Commercial	$4.49	/m^2 gross floor area	(l) x Col. (5)			
Industrial	$31,450	/ha gross site area	(l) x Col. (5)			
Institutional	$4.24/	m^2 gross floor area	(l) x Col. (5)			

EXAMPLE 7.5 – Sanitary DCC Calculation

A: Equivalent Population Calculation

Land Use	Col. (1) Estimated New Development	Units	Col. (2) Density or Equivalent Population Factor		Col. (3) = (1) x (2) Equivalent Population
Low Density Residential	1,985	dwelling units	3.2	persons per dwelling unit	6,352
Medium Density Residential	827	dwelling units	2.5	persons per dwelling unit	2,068
High Density Residential (1)	331	dwelling units	1.7	persons per dwelling unit	562
High Density Residential (2)	165	dwelling units	1.4	persons per dwelling unit	232
Commercial	51,380	m^2 gross floor area	0.013	persons per m^2 gross floor area	661
Industrial	23.08	ha gross site area	64.3	persons per ha gross site area	1,484
Institutional	50,000	m^2 gross floor area	0.011	persons per m^2 gross floor area	538
				Total Equivalent Population	11,896 (a)

B: Unit DCC Calculation

Net Sanitary DCC Program Recoverable	$7,650,473	(b)	
Existing Sanitary DCC Reserve Monies	$(853,264)	(c)	
Net Amount to be Paid by DCCs	$6,797,209	(d) = (b) – (c)	
DCC per Equivalent Person	$571.39	(e) = (d) / (a)	

C: Resulting Sanitary DCCS

Low Density Residential	$1,828	per dwelling unit	(e) x Col. (2)		
Medium Density Residential	$1,428	per dwelling unit	(e) x Col. (2)		
High Density Residential (1)	$971	per dwelling unit	(e) x Col. (2)		
High Density Residential (2)	$800	per dwelling unit	(e) x Col. (2)		
Commercial	$7.35	/m^2 gross floor area	(e) x Col. (2)		
Industrial	$36,732	/ha gross site area	(e) x Col. (2)		
Institutional	$6.15	/m^2 gross floor area	(e) x Col. (2)		

EXAMPLE 7.5 A – Sanitary DCC Calculation Based on a residential floor space model from example 4.1A

A: Equivalent Population Calculation

Land Use	Col. (1) Estimated New Development	Units	Col. (2) Density or Equivalent Population Factor		Col. (3) = (1) x (2) Equivalent Population
Low Density Residential	406.925	m² gross floor area	0.0156	persons per m² gross floor area	6,352
Medium Density Residential	124.050	m² gross floor area	0.0167	persons per m² gross floor area	2,068
High Density Residential (1)	28.135	m² gross floor area	0.0200	persons per m² gross floor area	563
High Density Residential (2)	11.550	m² gross floor area	0.0200	persons per m² gross floor area	231
Commercial	51.380	m² gross floor area	0.013	persons per m² gross floor area	662
Industrial	23.08	ha gross site area	64.3	persons per ha gross site area	1,485
Institutional	50.000	m² gross floor area	0.011	persons per m² gross floor area	538
				Total Equivalent Population	11,899 (a)

B: Unit DCC Calculation

Net Sanitary DCC Program Recoverable	$7,650,473	(b)	
Existing Sanitary DCC Reserve Monies	$(853,264)	(c)	
Net Amount to be Paid by DCCs	$6,797,209	(d) = (b) – (c)	
DCC per Equivalent Person	$571.39	(e) = (d) / (a)	

C: Resulting Sanitary DCCS

Low Density Residential	$8.92	/m² gross floor area	(e) x Col. (2)		
Medium Density Residential	$9.52	/m² gross floor area	(e) x Col. (2)		
High Density Residential (1)	$11.42	/m² gross floor area	(e) x Col. (2)		
High Density Residential (2)	$11.42	/m² gross floor area	(e) x Col. (2)		
Commercial	$7.35	/m² gross floor area	(e) x Col. (2)		
Industrial	$36,732	/ha gross site area	(e) x Col. (2)		
Institutional	$6.15	/m² gross floor area	(e) x Col. (2)		

The same methodology can be applied to calculating DCCs for roads, parks, water and drainage.

Water DCCs

Impact on the water supply and distribution system arises from both domestic (peak day and peak hour) demand and the requirement to provide adequate flows for fire protection. Both domestic or daily flows and fire flows vary, but to differing extents, with land use. The sizing of overall facilities has been found to be primarily dependent on peak day and peak hour flows. Therefore, allocation of net DCC recoverable costs between land uses is dependent on their relative impacts on the water system. The comparative impact on the water system can be expressed in terms of domestic demand which in turn relates to population density or for non-residential development, equivalent population density. Typical population densities for residential land uses can be applied in a manner similar to that which is used for the sanitary DCC calculation. Similarly, an area based demand may be expressed as an equivalent population demand. A typical industrial or commercial demand is 22,500 L/day/ha of gross site area; in comparison, the typical average per capita flow is 500 L/day. The calculation of equivalent population for non-residential land uses is shown in Example 7.6.

EXAMPLE 7.6 Equivalent Population of Non-Residential Land Uses for Water Impact

$P_{EQ} = Q_N/Q_R$ $= \frac{22{,}500\ L/day/ha}{500/L/day}$ $= 45\ pers/ha$	GIVEN: Average demand (L/day/ha gross site area) = Q_N Average per capita demand (L/day/capita) = Q_R Equivalent Population = P_{EQ} Assumptions: $Q_N = 22{,}500$ L/day/ha $Q_R = 500$/L/day

With average population densities for the various land uses, the total equivalent population can be calculated. Dividing the net amount to be paid by DCCs by the total equivalent service population results in a DCC per EDU. The water DCC for each land use is established by multiplying the DCC per capita by the per person densities for the respective land use development unit. Example 7.7 shows the water DCC calculation.

EXAMPLE 7.7 – Water DCC Calculation

A: Equivalent Population Calculation

Land Use	Col. (1) Estimated New Development	Units	Col. (2) Density or Equivalent Population Factor		Col. (3) = (1) x (2) Equivalent Population
Low Density Residential	1,985	dwelling units	3.2	persons per dwelling unit	6,352
Medium Density Residential	827	dwelling units	2.5	persons per dwelling unit	2,068
High Density Residential (1)	331	dwelling units	1.7	persons per dwelling unit	562
High Density Residential (2)	165	dwelling units	1.4	persons per dwelling unit	232
Commercial	51,380	m^2 gross floor area	0.009	persons per m^2 gross floor area	462
Industrial	23.08	ha gross site area	45	persons per ha gross site area	1,039
Institutional	50,000	m^2 gross floor area	0.011	persons per m^2 gross floor area	538
				Total Equivalent Population	**11,253 (a)**

B: Unit DCC Calculation

Net Water DCC Program Recoverable	$5,186,905	(b)			
Existing Water DCC Reserve Monies	$(734,583)	(c)			
Net Amount to be Paid by DCCs	$4,452,322	(d) = (b) – (c)			
DCC per Equivalent Person	$395.67	(e) = (d) / (a)			

C: Resulting Parkland DCC

Low Density Residential	$1,266	per dwelling unit	(e) x Col. (2)		
Medium Density Residential	$989	per dwelling unit	(e) x Col. (2)		
High Density Residential (1)	$673	per dwelling unit	(e) x Col. (2)		
High Density Residential (2)	$554	per dwelling unit	(e) x Col. (2)		
Commercial	$3.56	/m^2 gross floor area	(e) x Col. (2)		
Industrial	$17,805	/ha gross site area	(e) x Col. (2)		
Institutional	$4.26	/m^2 gross floor area	(e) x Col. (2)		

Parkland DCCs

Since people generate the need for park and open space, DCCs are based on the relative impact of each land use according to the same equivalent population factors that were used to derive sanitary and water DCCs. If non-residential land uses have been considered to benefit from the provision of parkland (discussion in Chapter 2) and thus will be charged DCCs, then equivalent populations for these uses must be determined as well.

To obtain a schedule of parkland DCCs, the following steps should be completed:

- determine the total equivalent population;
- divide the net DCC recoverable amount by the total equivalent population to obtain a per capita DCC; and,
- multiply the DCC per capita by the population density for the respective development unit.

For the collection of DCCs for improving parkland, the Inspector of Municipalities will be guided by the elements which are specifically listed in the legislation. The following comments are offered as an illustration of what will guide reviews of submissions to the Inspector of Municipalities.

- Landscaping includes the construction of playing fields (levelling ground, planting grass and other plant material), but does not include the construction of parking lots or access roads.
- Irrigation includes sprinkler systems.
- Playground and playing field equipment includes items normally classified as equipment such as swings and slides, but does not include buildings or structures such as dugouts, bleachers, or field houses. The term also does not include the construction of tennis or basketball courts, baseball diamonds, tracks or the installation of lighting systems.

A sample parkland DCC calculation is provided in Example 7.8.

EXAMPLE 7.8 – Parkland DCC Calculation

A: Equivalent Population Calculation

Land Use	Estimated New Development	Equivalent Population Factor		Equivalent Population	
Low Density Residential	1,985 dwelling units	3.2	persons per dwelling unit	6,352	
Medium Density Residential	827 dwelling units	2.5	persons per dwelling unit	2,068	
High Density Residential (1)	331 dwelling units	1.7	persons per dwelling unit	562	
High Density Residential (2)	165 dwelling units	1.4	persons per dwelling unit	232	
			Total Equivalent Population	9,213 (a)	

B: Unit DCC Calculation

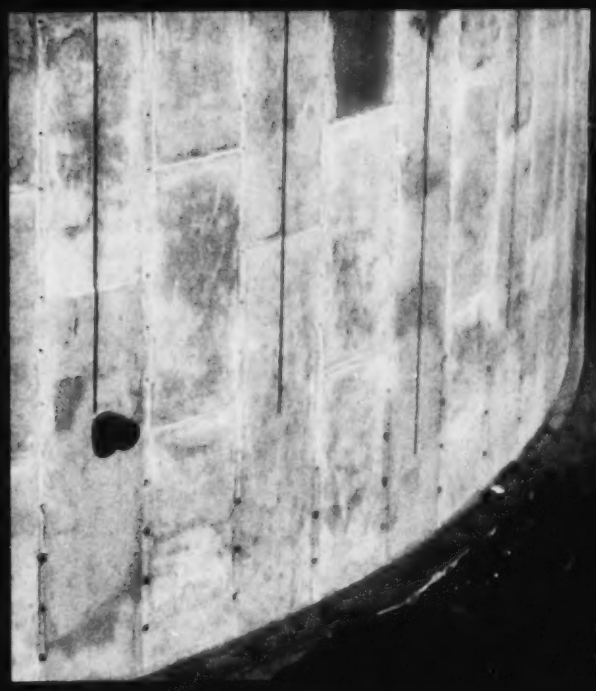
Net Parkland DCC Program Recoverable	$6,627,922	(b)		
Existing Parkland DCC Reserve Monies	$(362,706)	(c)		
Net Amount to be Paid by DCCs	$6,265,216	(d) = (b) – (c)		
DCC per Equivalent Person	$680.02	(e) = (d) / (a)		

C: Resulting Parkland DCC

Low Density Residential	$2,176	per dwelling unit	(e) x Col. (2)		
Medium Density Residential	$1,700	per dwelling unit	(e) x Col. (2)		
High Density Residential (1)	$1,156	per dwelling unit	(e) x Col. (2)		
High Density Residential (2)	$952	per dwelling unit	(e) x Col. (2)		

CHAPTER EIGHT

Bylaw Presentation



Chapter 8 – Bylaw Presentation

This chapter outlines how the DCC bylaw and supporting documentation should be presented, once the charges have been determined using the appropriate DCC calculation methodology. A comprehensive but clear compilation of all data, assumptions, rationales, and calculations is important for three reasons:

- to assist in the Ministry's review of the bylaw;
- to facilitate monitoring and tracking of projects after the bylaw has been adopted; and,
- to serve as a good starting point for future bylaw amendments.

Legislative Basis

Section 934 (5) of the *Local Government Act* states that a local government must make available to the public the information used to formulate DCCs such as considerations, information, and calculations, with the exception of the contemplated acquisition costs of specific properties.

Further, the guiding principle of accountability requires that DCCs be developed through a transparent process. Therefore, all documentation related to the charges should be accessible as well as understandable to the stakeholders.

DCC Bylaw

A DCC bylaw is a relatively brief document with the standard preamble clauses and bylaw features. A section on definitions or calculation of area may be helpful.

The DCC rates for the various categories of infrastructure are usually presented in a series of Schedules that accompany the bylaw. The schedules should summarize the charges for the applicable land uses, based on the representative unit of development.

Supporting Documentation

All data, assumptions, and rationale used to develop DCCs should be included in a supporting document to the DCC bylaw. This background report, accompanied by the bylaw will be reviewed by the Ministry before statutory approval is granted. It will also be made available to the public, upon request.

The supporting documentation will allow the validity of the assumptions made in formulating the proposed DCCs to be monitored over time. As the need for revisions becomes evident, an update to the DCC program can easily be made, if the assumptions are clearly laid out.

The background report should be written in plain language so that it will be easily understood by all stakeholders. Information in the report should include a summary of capital cost and revenue

assumptions as well as an outline of the various methodologies used to derive the charges.

A suggested table of contents for the DCC bylaw supporting documentation is presented in Table 8.1.

TABLE 8.1 – Suggested Table of Contents for DCC Background Report

Executive summary		
1.0	Introduction	
	1.1	Objectives
	1.2	Background
	1.3	Guiding Principles
	1.4	Use of Best Practice Guides
2.0	General Considerations	
	2.1	Legislative and Regulatory Background
	2.2	Public Participation Process
	2.3	Bylaw Exemptions
	2.4	Collection Charges
	2.5	In-Stream Applications
	2.6	Municipal Assist Factor
3.0	Growth Projections and Planning Assumptions	
	3.1	Relationships to Other Municipal Documents
	3.2	Estimation of New Development
	3.3	Projected Residential Development Units
	3.4	Commercial Development Projection
	3.5	Institutional Development Projection
4.0	Road Development Cost Charges	
	4.1	Road DCC Program
	4.2	Traffic Generation and Calculation of Road Impact
	4.3	Development Cost Charge Calculation for Road
	4.4	Breakdown of Road DCC Burden and Projection of Yearly DCC Revenues
5.0	Storm Drainage Development Cost Charges	
	5.1	Storm Drainage DCC Program
	5.2	Imperviousness and Calculation of Equivalent Drainage Units
	5.3	Development Cost Charge Calculation for Storm Drainage
	5.4	Breakdown of Storm Drainage DCC Burden
6.0	Sanitary Development Cost Charges	
	6.1	Sanitary DCC Program

TABLE 8.1 – Suggested Table of Contents for DCC Background Report		
	6.2	Sewage Generation and Calculation of Equivalent Population
	6.3	Development Cost Charge Calculation for Sanitary
	6.4	Breakdown of Sanitary DCC Burden and Projection of Yearly DCC Revenues
7.0	Water Development Cost Charges	
	7.1	Water DCC Program
	7.2	Water Demand and Calculation of Equivalent Population
	7.3	Development Cost Charge Calculation for Water
	7.4	Breakdown of Water DCC Burden and Projection of Yearly DCC Revenues
8.0	Parkland Development Cost Charges	
	8.1	Parkland Acquisition and Improvement DCC Program
	8.2	Calculation of Equivalent Population
	8.3	Development Cost Charges for Parkland
	8.4	Breakdown of Parkland DCC Burden and Projection of Yearly DCC Revenues
9.0	Summary of Development Cost Charges	
	9.1	Summary of Proposed DCCs
	9.2	Comparison to Current DCCs
References		
Appendices		
	A	*Local Government Act* Excerpts
	B	Record of Public Correspondence Received
	C	Project Detail Sheets

Supporting documentation should also include a completed copy of the Ministry Submission Summary Checklist (Appendix A).

Ministry of Community Services Submission Requirements

The aim of *the Development Cost Charge Best Practices Guide* is to establish of a framework by which new capital cost burdens are distributed equitably between existing and future development.

The primary objective of the Ministry's review and approval process for DCC bylaws is to ensure that each bylaw is based on sound principles and facts supporting the "framework" set out in the Best Practices Guide.

If the bylaw is well structured and supporting documentation clearly referenced to the Best Practices Guide, the Ministry review time for approval will be expedited and future bylaw amendments should be easier.

The Ministry's review and approval process will examine the rationale for each component of a development cost charge (e.g. eligible projects, capital costs, benefit factors, assist factors, and equivalent population projections). Therefore, a DCC bylaw submission should outline the rationale used in determining each component, especially if the approach chosen does not conform to the Best Practices Guide. All communities have unique features - if the "best practice" does not fit, then an acceptable alternative may be chosen.

To assist the review process, please describe any additional steps or assumptions used beyond those in the Best Practices Guide.

Here are some key tips to help ensure the Ministry can easily assess your submission:

1. If some specific issue does not apply for your particular submission, please note why (this makes clear that a point was not missed by accident).

2. Where a "Best Practice" is not selected, it is useful to include as much explanatory material as possible. For example, the statement that "existing development is adequately serviced" should be supported with information that demonstrates why this is the case. (e.g., the local government has an annual capital program that systematically replaces existing infrastructure. In such a case, supporting documentation should reference the five-year financial plan.)

3. In the category of park land, please include in the submission an analysis, by class, of existing park land, current standards, and quantity expected to be funded by growth. In the category of park land improvements, please include a listing of the improvements to confirm that each item falls within the allowable categories (s. 935 (3)(b)(ii) *Local Government Act*).

The Ministry Submission Summary Checklist follows.

MUNICIPALITY/REGIONAL DISTRICT
MINISTRY OF COMMUNITY SERVICES
SUBMISSION SUMMARY CHECKLIST
(to be completed by local government)
DCC BYLAW(S) NO.(S)

Is this bylaw a ☐ **New DCC Bylaw**
☐ **Major DCC Bylaw Amendment**
☐ **Minor DCC Bylaw Amendment**

Please complete checklist by marking the appropriate boxes, and providing references to background material and other requested information. If DCCs are established on a basis other than the DCC Best Practices Guide, provide a brief explanation for the approach used. If space is insufficient, reference pages in submission where this is covered or append additional pages.

	DCC RECOMMENDED BEST PRACTICE	Submission Page reference
1.	Did the development of this DCC bylaw include: ☐ a full public process? ☐ input from stakeholders? ☐ Council input only?	
	Why?	
2.	Are the Road DCCs established: ☐ on a municipal-wide basis? ☐ on an area specific basis?	
	Why?	
3.	Are the Storm drainage DCCs established: ☐ on a municipal-wide basis? ☐ on an area specific basis?	
	Why?	
4.	Are the Sanitary sewer DCCs established: ☐ on a municipal-wide basis? ☐ on an area specific basis?	
	Why?	

	DCC RECOMMENDED BEST PRACTICE	Submission Page reference
5.	Are Water DCCs established: ☐ on a municipal-wide basis? ☐ on an area specific basis?	
	Why?	
6.	Are Parkland and parkland improvement DCCs established: ☐ on a municipal-wide basis? ☐ on an area specific basis?	
	Why?	
	Existing park standards/holdings Park standards for DCC purposes	
7.	Is the DCC time frame: ☐ a revolving program (_____ Years)? ☐ a build out program (_____ Years)? ☐ other?	
	Why?	
8.	Are residential DCC categories established on the basis of: ☐ density gradient? ☐ building form? ☐ other?	
	Why?	
9.(a)	Are residential DCCs imposed on the basis of: ☐ development units? ☐ floor space? ☐ other? If single-family residential DCCs are imposed on the basis of floor space, does the local government have a bylaw in place allowing DCCs to be levied at the building permit stage on fewer than 4 self-contained dwelling units?	
	Why?	

	DCC RECOMMENDED BEST PRACTICE	Submission Page reference
9.(b)	Are commercial and institutional DCCs imposed on the basis of: ☐ floor space? ☐ other?	
	Why?	
9.(c)	Are industrial DCCs imposed on the basis of: ☐ gross site area? ☐ other?	
	Why?	
10.	Is the DCC program consistent with: ☐ the *Local Government Act*? ☐ Regional Growth Strategy? ☐ Official Community Plan? ☐ Master Transportation Plan? ☐ Master Parks Plan? ☐ Liquid Waste Management Plan? ☐ Affordable Housing Policy? ☐ Five Year Financial Plan	
	Why not?	
11.	Are DCC recoverable costs, consistent with Ministry policy, clearly identified in the DCC documentation: ☐ Cost allocation between new and existing? ☐ Grant Assistance? ☐ Developer Contribution? ☐ Municipal Assist Factor? ☐ Interim Financing? ☐ Other	
	Why?	
	Is capital cost information provided for: ☐ Roads? ☐ Storm Drainage? ☐ Sanitary Sewer? ☐ Water? ☐ Parkland? ☐ Parkland improvements?	Ref._____ Ref._____ Ref._____ Ref._____ Ref._____ Ref._____

	DCC RECOMMENDED BEST PRACTICE	Submission Page reference
12.	Are DCC recoverable costs which include interest clearly identified in the DCC documentation as follows: ☐ Interest on long-term debt is *excluded*? ☐ For specific projects, interest on long-term debt is *included*? ☐ Other? If interest on long-term debt in included for specific projects, does the DCC submission include: ☐ A council/board resolution authorizing the use of interest? ☐ Confirmation that the interest applied does not exceed the MFA rate or if borrowing has already been undertaken, the actual rate providing it does not exceed the MFA rate? ☐ Confirmation that the amortization period does not exceed the DCC program time frame? ☐ Evidence that the current DCC reserve fund balance is insufficient for the work in question? ☐ Demonstration that the project is an exceptional circumstance (fixed capacity, out-of-sequence, or Greenfield)? ☐ Evidence of public consultation and disclosure in the financial plan and DCC report regarding inclusion of interest?	
13.	Does the municipal assist factor reflect: ☐ the communitys' financial support towards the financing of services for development? ☐ other?	
	Why?	
	Has a municipal assist factor been provided for: ☐ Roads? Assist factor _____% ☐ Storm Drainage? Assist factor _____% ☐ Sanitary Sewer? Assist factor _____% ☐ Water? Assist factor _____% ☐ Park land? Assist factor _____% ☐ Park land improvements? Assist factor _____%	
14.	Are DCCs for single family developments to be collected: ☐ at the time of subdivision approval? ☐ other?	
	Why?	

	DCC RECOMMENDED BEST PRACTICE	Submission Page reference
15.	Are DCCs for single-family land uses to be collected: ☐ at the time of subdivision? ☐ at the time of building permit issuance?	
	Why?	
16.	Is a DCC monitoring and accounting system to provide a clear basis for the tracking of projects and the financial status of DCC accounts: ☐ in place? ☐ to be set up?	
	Why not?	
17.	Is a suitable period of notification before a new DCC bylaw is in effect, known as a grace period: ☐ provided for? ☐ other?	
	Why not?	
18.(a)	Does the DCC bylaw set out the situations in which a DCC credit or rebate are to be given? ☐ Yes ☐ No	
18.(b)	If no, has Council adopted a policy statement that clearly identifies situations in which a DCC credit or rebate should be given or would be considered by Council? ☐ Yes ☐ No If yes, a copy of the policy statement is included with this submission.	Ref._____
	If no, why not?	

	DCC RECOMMENDED BEST PRACTICE	Submission Page reference
19.	Has a process to provide for minor routine amendments to the DCC bylaw to reflect changes in construction and other capital costs: ☐ been established? ☐ not considered necessary? ☐ other?	
	Why?	
20.	Has a process to provide for major amendments to the DCC bylaw, involving a full review of DCC issues and methodology, to be completed not more than once every five years: ☐ been established? ☐ not considered necessary? ☐ other?	
	Why?	
	Contact _____ Position _____ Phone _____ *Signed by _____ Position _____ (*Signature of the Head of engineering, finance or planning for the local government.) Signed by (second signature optional)_____ Position _____ Date _____	

MUNICIPALITY/REGIONAL DISTRICT

SUMMARY OF DCCs - BYLAW NO(S).

	Residential (per single family dwelling)	**Commercial** (per square metre)	**Industrial** (per hectare)	**Institutional** (per square metre)
Roads				
Storm Drainage				
Sanitary Sewer				
Water				
Park Land				
Park Land Improvements				
Total				

Note: If not on a municipal-wide basis, please indicate minimum and maximum charges.

For **amendment** bylaw, please indicate nature of change	Existing	Proposed
• New DCC service added		
• Time horizon		
• Capital costs		
• Weighting of types of development (residential, commercial, industrial, etc.)		
• Potential development		
• Allocation of benefit between existing and potential units of development		
• Assist factor		
• Inclusion of Specific Interest Charges		
• Provide that a charge is payable where there is fewer than 4 self-contained dwelling units		
• Establish an amount higher than the $50,000 minimum provided for in the *Local Government Act*.		
• Is a suitable period of notification before a new DCC bylaw in effect, known as a grace period?		
Other: (please list) • _____ • _____		

APPENDIX B

B.C. Reg.166/84
Regulation of the Minister

Deposited June 5, 1984

Local Government Act

DEVELOPMENT COST CHARGE (INSTALMENTS) REGULATION

[includes amendments up to B.C. Reg. 58/85]

Definitions

1 In this regulation:

"**charge**" means a development cost charge imposed under section 933 (6) of the *Local Government Act* for a subdivision approval or grant of a building permit;

"**developer**" means every person on whom a charge is imposed.

Payment may be by instalment

2 Adeveloper liable to pay a charge may elect to pay it by instalments, subject always to the conditions set out in sections 3 to 7.

Exception

3 Section 2 does not apply where the charge is under $50 000 unless the council has by bylaw authorized that all charges under $50 000 imposed within its jurisdiction may be paid by instalments in accordance with this regulation.

Payment of charge in full

4 The developer shall pay the charge in full within 2 years after the date that the subdivision is approved or the building permit is granted by paying not less than

(a) 1/3 of the total charge at the time of the approval of the subdivision or granting of the permit, and

(b) 1/2 of the balance within one year after the date of the approval of the subdivision or granting of the permit.

Failure to pay

5 Where a developer elects to pay the charge by instalments and fails to pay an instalment within any time required for payment by section 4, the total balance of the charge becomes due and payable immediately.

Interest

6 No interest is payable on the unpaid balance of a charge until it becomes due and payable, but when it does, it is a condition of election under section 2 that interest is payable from that date until payment at the rate or rates prescribed under section 11 (3) of the *Taxation (Rural Area) Act* for the period of non-payment.

Surety for payment by instalment

7 A developer electing to pay a charge by instalments must deposit with the treasurer at the same time as he pays the first instalment

(a) an irrevocable letter of credit or undertaking from a bank, credit union or a trust company registered under the *Financial Institutions Act*, or

(b) a bond of a surety licensed under the *Insurance Act*, or

(c) a security duly assigned which ensures to the satisfaction of the treasurer that upon default the balance of the unpaid charge will be recoverable from the person, the bank, the surety or from the proceeds of the realization of the security, as the case may be.